OBSERVATIONS

MEDICAL AND POLITICAL:

ON THE

SMALL-POX AND INOCULATION.

AND ON THE

DECREASE of MANKIND at every AGE,

WITH A

Comparative VIEW of the DISEASES most fatal to LONDON during ninety YEARS.

INCLUDING AN

ATTEMPT to demonstrate in what Manner LONDON may save near *two Thousand*, GREAT-BRITAIN and IRELAND between *twenty* and *thirty Thousand*, and EUROPE about *three Hundred* and *ninety Thousand* LIVES Annually.

By W. BLACK, M.D.

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M DCC LXXXI.

ERRATA:

Page	Line	
3	8	for designs, *read* signs.
25	19	for 1717, *read* 1715.
37	6	*read* preceding *year*.
58	6	for blank, *read* blanks.
73	28	for to be buried them, *read* to be buried in a.
76	22	for he, *read* the
84	11	*read*, makes not quite two hundred.
87	21	*dele* annually.
98	7	for bills, *read* records.
104	2	for to the original, *read* the original.
112	last	*dele*, *five*.
136	last	*read*, beneath the ſtandard of the burials: Amongſt them J.
139	7	*read*, marriages in the country one with.
154	3	*read*, from time to time.
161	8	for flux, *read* flox.
167	11	for 1763, *read* 1773.
167	25	for numbers in, *read* numbers to.
183	26	for diſcountenanced, *read* reprobated.
186	last	for borough, *read* burrow.
189	4 and 5	*read* more diſtinctly noted by Pliny, as affecting the Roman army.
196	6	for would effect have the ſame *read*, would have the ſame effect.
198	3	*read* to by medical men.

BRITISH MUSEUM

OBSERVATIONS

MEDICAL AND POLITICAL.

CHAP. I.

The Origin of the Small-pox and Meaſles: the Treatment of the former Diſeaſe by the Arabians and Eaſt Indians: the Tranſportation of the variolous Infection to America: Inoculation when introduced into Europe: its Advantages ſtated: the proportion who die in Natural and Inoculated Small-pox: the Controverſy ſtated, whether general Inoculation in London and other great Cities, at the private Houſes of the Inhabitants, would be beneficial or hurtful to the Community at large: Baron Dimſdale's different Publications on this intereſting Topick examined, and as the Author conceives refuted: an Attempt to demonſtrate in what manner London may ſave near to two Thouſand, Great-Britain and Ireland between twenty and thirty Thouſand, and Europe about three Hundred and ninety Thouſand Lives annually.

THE Roman Empire in Italy and the Weſt, was finally overturned by the Northern Barbarians in the ſixth century of the Chriſtian era; from that event literarure

and arts lay for many centuries after, buried in the aſhes of Rome. To the craſh of this immenſe coloſſus, another memorable cataſtrophe ſoon ſucceeded; a new religion appeared in the Eaſt, the Arabians under Mahomet, (p. c. 622) ſallied forth ſword in hand to propagate his religious doctrines; and ſeveral great kingdoms and provinces gradually bowed to the Mahometan yoke.

THREE new diſeaſes, the Small-pox, Meaſles, and Spina ventoſa, are firſt deſcribed by the Arabians: the two former diſeaſes had never before been ſeen in any part of the globe, frequented by Europeans; at leaſt no hiſtory is found of them in any ancient medical author, poet, or hiſtorian of either Greece or Rome. Mahomet's followers are ſaid to have exported thoſe two ſpecific poiſons from the deſerts of Arabia. The moſt remote traces or mention, which I can find of Small-pox, is in Egypt, during the reign of Omar, Mahomet's ſucceſſor. Variolous poiſon was ſoon ſpread by the Mahometans through Paleſtine, Syria, Egypt, Perſia, Spain, and and wherever they carried their victorious arms. Many centuries after, the cruſades or holy wars were inſtrumental in diffuſing

ſing them more widely over Europe; and ſince that time, both thoſe diſeaſes have committed incredible havock amongſt the human ſpecies.

Rhazes (P. C. 900) and Avicenna, both give a correct hiſtory of the diſtinct and confluent Small-pox, of the diagnoſtic and prognoſtic, the favourable and bad deſigns, and the method of cure. Rhazes was by birth a Perſian, and practiſed at Bagdat.

His treatiſe on the Small-pox and Meaſles, is tranſlated from the Arabic, by the care of Dr. Mead, and may be ſeen entire in the latter's works. He appears in many inſtances to have treated them judiciouſly, and recommends the cooling regimen to a degree which phyſicians, practiſing in northern climates, might not unreaſonably think bordering on exceſs.

If the feveriſh heat and ſymptoms ran high, Rhazes directed plentiful blood-letting before the eruption, and even after it, if the fever had not abated. When the fever was moderate, and the pulſe and breath not conſiderably diſturbed from the natural ſtate, blood was drawn ſparingly. In imitation of

Galen, young perſons under fourteen years of age were cupped only: water cooled with ſnow was given for drink in large draughts; and if this did not paſs off by urine or ſweat, or the fever decreaſe, he directed that it ſhould be forced up again by vomiting. To promote the eruption of puſtules, the ſick perſon was wrapped up in clothes, his body rubbed all over, and cold water given for drink; for the ſame purpoſe, two baſons of hot water were placed, one before, the other behind, and the body covered only with a ſhirt: the hot vapours aſcending, were expected to ſoften the ſkin, and to facilitate the eruption. This vapour was not ſuffered to cool upon the body, but wiped off with great diligence.

SEVERAL applications were preſcribed to defend the eyes, if redneſs and itching indicated a crowd of puſtules coming upon thoſe tender organs. He alſo took great care to protect the throat from numerous puſtules by gargles; if great hoarſeneſs and ſtraitneſs of breathing threatened future ſuffocation, blood was drawn, even after the eruption. Where the ſkin is hard, as in the legs and feet, they were bathed in warm water, and ſometimes poultices applied. To ripen the Small-pox, baſons of warm water were employed as before

fore deſcribed. Puſtules in the legs that were large and maturated, he directed to be opened with an inciſion-knife. Should the puſtules be large or numerous, he ſays they muſt be dried up, or the fluid contained in them ſoaked up with fine cotton. To dry up the puſtules, he recommends ſeveral aſtringent and abſorbent applications, ſuch as alum, bole, dragon's blood, and liniments compounded of ſimilar ſubſtances. When the Small-pox abounded with moiſture, the ſick were directed to lie on powdered roſes, rice-meal, or a matraſs ſtuffed with thoſe ingredients.

All fleſh meat, fiſh, hot and high ſeaſoned things, and milk were forbid: barley water mixed with ſugar, or decoction of raiſins, figs and fennel ſeeds were given for drink, and in violent fever, the cooling juice of acid pomegranate ſeeds, boiled with ſugar, and a ſmall portion of gum arabic; the chamber was alſo kept cool. He deſcribes the compoſition of many ſyrups and oxymels, given in Small-pox; they were a mixture of the juices of ſeveral acid fruits and vegetables, to which vinegar and ſugar were ſuperadded; and ſometimes a ſmall quantity of camphor made one ingredient in the cooling ſyrups and electuaries.

I ſhall

I SHALL now, ſo far as facts and hiſtory enable me to proceed with any probability, endeavour to inveſtigate the origin of the Small-pox and Meaſles; two diſtempers which have unpeopled more of Europe than the fierceſt wars. Doubts and controverſies have ariſen whether or not thoſe peſts of mankind were engendered in the Arabian deſerts. If they had been known in Greece, Rome, Alexandria, in any of the wide dominions of the Roman Empire, or even in Perſia, we muſt conclude that the Greek and Roman phyſicians, who deſcribed every diſeaſe down to the moſt minute, would not have omitted the hiſtory and cure of two ſo conſpicuous and fatal. Rhazes and Avicenna, notwithſtanding, treat of them as diſeaſes familiar in their time, and without any intimation of novelty: the earlieſt Arabian accounts convey no ſuſpicions of this nature. Rhazes, who entertained a profound reverence for Galen, ſays that, although that author left no deſcription of, nor regular practice in Small pox, yet he ſuppoſes, that Galen alludes to this diſeaſe under the name of peſtilential carbuncle and confluent inflammation: this more probably meant putrid ſore throat and ſcarlet fever; and Phyſicians are at preſent univerſally agreed,

that

that neither the Greeks nor Romans have taken the leaſt notice of Small-pox or Meaſles.

We cannot but conſider it as a moſt extraordinary and even a miraculous circumſtance, that two diſeaſes, whoſe infection is ſo extremely contagious, eſpecially that of Small-pox; the poiſon of which adheres to cloaths, woollen, cotton and porous materials during a long time, and has in this way been conveyed to very diſtant kingdoms; that ſuch a diſeaſe could have been circumſcribed, and its ravages confined for ſeveral thouſand years to a ſmall corner of the globe, not divided by ſea, from the reſt of Aſia, is altogether unaccountable. If Small pox had diſtilled its venom upon Arabia alone, until the era of Mahomet, that kingdom muſt have had very little or no communication with the reſt of its neighbours; and it is one proof that Arabia and its inhabitants had not undergone many revolutions. The intercourſe of diſtant nations was then certainly rare and difficult, and I conceive they ſtood in that unſociable relation, at leaſt to Arabia, from the creation; but whether the exiſtence of the univerſe is dated ſix, or ſixty thouſand years back in antiquity, it is inexplicably ſingular, that Small-pox did not much earlier find a vent from Arabia, to

diſembogue

diſembogue its virulence upon the bordering nations.

Dr. Mead thinks, that Small-pox were firſt generated in the hot climate of Ethiopia, and together with the plague, tranſplanted from thence acroſs the narrow channel of the Red Sea, into the oppoſite continent Arabia; this is weak conjecture, unſupported by proof or probability. If Small-pox had been a common diſeaſe in Ethiopia, there were various opportunities for its being carried down the Nile into Nubia and the heart of Egypt, countries bordering on Ethiopia, and of the remoteſt antiquity in arts and cultivation. The Greek philoſophers many centuries before the birth of Chriſt, had ſailed up the Nile, above the ſecond cataract: Herodotus even gives a rude geographical chart of Ethiopia.

Seſoſtris, one of the Egyptian Kings, made himſelf maſter of Ethiopia, and left behind him ſeveral ſtone ſtatues and monuments of his power; he alſo conquered Paleſtine and Scythia. Sabacon, one of the Ethiopian Kings, in the early periods of Egyptian hiſtory, is ſaid to have conquered the latter country, and to have reigned

reigned over it fifty years. Cambyſes, the ſon of Cyrus, after ſubduing Egypt ſent Ambaſſadors, or rather ſpies into Ethiopia: he ſailed up conſiderably beyond Thebes, and ſet out to invade Ethiopia; a ſcarcity of proviſions, it is true, obliged him to return back without penetrating acroſs the deſerts; but he conquered ſome of the Ethiopian provinces bordering on Egypt. When Herodotus made the tour of Egypt, he was informed that ſeveral of the natives had travelled into the heart of Ethiopia.

It is ſtill as marvellous, that the diſeaſe ſhould not have burſt over the boundaries of Arabia. The northern Arabian princes had waged war with the Egyptians, the Perſians, and the kings of Aſſyria. Cyrus, Cambyſes, and afterwards Alexander the Great, reduced ſome of the northern Arabian provinces, to a temporary ſubjection. In the reign of Auguſtus, before Celſus wrote, and one century and a half before Galen, Arabia to the north was ſubjected to Rome. Auguſtus' generals penetrated even into Arabia felix, and into Ethiopia. In the ſecond century, the fleets of Trajan ravaged the coaſts of Arabia, bordering on the Red Sea: in his reign, ſeveral of the

northern provinces were tributary to Rome: beſides, the Romans, in the height of their glory, and after the conqueſt of Egypt, carried on a conſiderable trade with Arabia and India. One hundred and twenty veſſels ſailed annually down the Red Sea, traverſed the Arabian coaſts, and arriving at the Malabar ſhores in India, and the iſland of Ceylon, returned from thence loaded with cinnamon, pepper, ginger, ſilk, pearls and diamonds. Writers ſay that the Arabians and Egyptians ſtill earlier, had purſued that traffic. Mecca too, the Mahometan prophets birth place, ſtands on the borders of the Red Sea. The queen of Sheba, who came to viſit Solomon at Jeruſalem, one thouſand years before Chriſt, and who brought preſents of gold, and rich ſpices, is generally thought to have travelled from Ethiopia or Arabia. Throughout all this intercourſe, variolous infection ſeems not to have diſperſed itſelf over any other country.

On whatever ſide we caſt our eyes, to explore the parentage of Small-pox and Meaſles, we behold a boundleſs ocean of ſurmiſes and conjectures. Let us now direct our enquiries and reſearches to India, for ſome additional rays of light to illuminate this dark ſubject.

Mr.

Mr. Holwel, a gentleman of reſpectable rank and character in the Company's ſervice, and who reſided great part of his life in India, (Indoſtan,) publiſhed ſome years ago, a very ſenſible treatiſe on the practice of Inoculation, and the medical treatment of inoculated Small-pox in that country. It is believed, ſays he, in India, that Small-pox raged there time immemorial, and that the Bramins or Prieſts, time out of mind, have practiſed Inoculation. In confirmation of this, he quotes the Gentoo Code of Laws, and their ſcripture, which, according to the Bramins, has been now promulgated three thouſand, three hundred and ſeventy-one years, by their original lawgiver Brama. In this code there is a form of divine worſhip and prayers, inſtituted to be offered up to the *Goddeſs of Spots*, a ſuppoſed female divinity. Theſe ceremonies and religious practices, are ſtill faithfully obſerved during the continuance of Small-pox, Meaſles, and other epidemical diſeaſes accompanied with eruptions on the ſkin; and certain it is, that no people upon earth have adhered ſo uniformly and ſcrupulouſly through a revolution of ages, to the eſtabliſhed ceremonies and inſtitutions of their great prophet, as the Eaſt Indians.

Suspicions and difficulties ſtill ſtart up in our progreſs to evolve, this not only curious, but intereſting ſubject from obſcurity. In the firſt place, chronology, which depends upon oral tradition, is not to be received without many doubts and ſcruples. The Goddeſs of Spots is alſo a vague term: the ſpots might ſignify any eruptive or cutaneous diſeaſes. On the other hand, Mr. Holwel ſays, that Inoculation in India is a practice, the origin of which is too remote to be traced back: this likewiſe probably reſts upon the imperfect and dubious records of tradition. We know that in England, Inoculation is juſt ſixty years introduced, and at that time it had been but forty years known at Conſtantinople. The Turks again aſcribe the origin of the practice to Circaſſia, one of the Aſiatic provinces of Turkey. Enquiry hitherto has been puſhed no further back; but perhaps it is to India that Europe is originally indebted for this important diſcovery, through the medium of the Circaſſians.

Neither Rhazes, Avicenna, nor any of the Arabian phyſicians make the leaſt mention of Inoculation. Had variolous poiſon been tranſported from India to Arabia, the phyſicians of the latter nation could not have remained

remained ignorant of a practice, according to Indian tradition, ſo univerſal and ancient, and attended with ſuch happy conſequences: at leaſt, we may fairly preſume that the Arabian writers would not have obſerved a profound ſilence upon Inoculation, if they had heard of its uſe in any part of the world.

THE queſtion therefore remains to be determined, whether Small-pox and Meaſles were firſt engendered in the climates of Arabia or India, or whether both countries did not give birth to thoſe ſcourges of the human race. We know that the diſeaſe is not bred in the human frame, but that it is propagated from one to another by contagion: America, neither in the cold nor torrid regions, had ever known Small-pox, until they were carried to that continent by Europeans. Thouſands in this iſland, and in other countries who keep out of the ſphere of variolous infection, live to a great age, without undergoing the diſeaſe.

RHAZES when recommending cooling ſyrups in Small-pox, adds, "Perhaps the ſyrup of pearls, which the *Indians* deſcribe, and of which they boaſt more than they could have experienced, may be more powerful; for they ſay, that if any one drinks of that ſyrup, though

though *nine puſtules* have already appeared, there will not come out a tenth." If Indians mean the people of Indoſtan, which is highly probable, this is rather in favour of Mr. Holwel's idea as to the antiquity of Small-pox in India: but let it be conſidered, that Rhazes lived in Perſia above two hundred years after it was ſubdued by the Arabians; and in that time the contagion might have been diſſeminated amongſt the inhabitants of India.

SUPPOSING for a moment, that Small-pox and Inoculation were as ancient in India, as the Bramins and Mr. Holwel give out; we are extremely puzzled to conceive how the diſeaſe could have raged from the time of Brama, above two thouſand years, without ever being heard of in Europe, or ever croſſing over into Perſia: there was no ſea, nor obſtacle to prevent the communication between the two nations; and the kings of Perſia poſſeſſed a ſmall portion of India: much of Aſia, ſays Herodotus was diſcovered in the reign of Darius; he ſent ſhips, which ſailed down the river Indus into the Indian Ocean; this hiſtorian deſcribes ſeveral provinces of India to the South of Perſia; he calls it the remoteſt part of the habitable world.

DARIUS

DARIUS we are assured received a larger annual tribute from the different parts of India subject to Persia, than from any other of the twenty great Satrapies, or governments into which he divided his immense Empire. Alexander (a. c. 356) conquered some of its northern provinces, and sailed down the whole course of the Indus with a large army.

ALL the knowledge which I have been able to extract out of books, and all the reflections I am capable of making upon this subject, are now laid before the reader. I can only answer for myself, and confess, that many of my doubts are still unsatisfied: without new materials, which I have neither leisure nor opportunity to collect, my opinion must remain in suspense. Some of our Oriental travellers, and Antiquarian correspondents, may possibly favour us with additional lights that will conduct to the original source of variolous poison; for I conjecture, that the disease though until then a stranger to Europe, was much more ancient than the era of Mahomet. The Indian practice in Small-pox, and the manner in which Inoculation is performed there, as described by Mr. Holwel, is not undeserving of medical attention.

INOCULATION in India is performed by a particular tribe of Bramins, who are delegated annually for that purpoſe, and make a tour or ſeparate circuits in travelling parties to Inoculate all the diſtant provinces. They arrive at the place of their deſtination a few weeks before the uſual return of the natural diſeaſe. The inhabitants who mean to have themſelves, or children Inoculated, know the time of their arrival, and abſtain according to eſtabliſhed rules of the Bramins, for one month before the Inoculators periodical viſitation from fiſh, milk, and a kind of butter made of Buffalos milk; this is the invariable and only preparatory regimen.

UPON reaching the place of deſtination, the Bramins proceed from door to door to Inoculate; going down one ſide of the ſtreet and returning up the other ſide. The fee for each perſon is about a penny, and they are conſtantly employed from morning until night. They Inoculate generally on the outſide of the arm, the males about the middle, betwixt the wriſt and the elbow; the females betwixt the elbow and ſhoulder. The operator firſt rubs the part with a dry cloth, during

ring eight or ten minutes; then with a ſmall inſtrument made like a crow-quill, and ſharp at the point, he makes, in a ſmall ſpace, which might be covered with a ſilver groat or ſix-pence, ſeveral ſlight ſcratches, ſo that the ſmalleſt appearance of blood may be perceptible: a pledget of cotton impregnated with variolous matter is then applied, after being a little wetted with water from the *Ganges*, (every country has its ſuperſtitious follies) over all a bandage is rolled; ſix hours after the bandage is removed, and the cotton left to fall off of its own accord.

VARIOLOUS matter taken from Inoculated Small-pox of the preceeding year is generally uſed for Inoculation; but is never received nor preſerved from natural Small-pox, however mild and diſtinct. There are many inſtances of the variolous matter entangled with cotton, and kept cloſe ſtopped from the air in a bottle during five or ſix years, at the end of this period proving active.

THE ſame prohibitory regimen in diet is continued through the diſeaſe, as before Inoculation: but what will appear ſtill more ſingular, and to us at firſt ſight raſh, every

morning before Sun-riſe, and every evening after Sun-ſet, the patients after Inoculation are ſtripped naked, and ſluiced over the head and body with buckets of cold water. This cold bathing is continued until the eruptive fever comes on, which by ſuch means is rather haſtened, and commences about the cloſe of the ſixth day after Inoculation. Then they deſiſt from cold bathing a few days during the eruptive fever, leaſt fermentation ſhould be interrupted, and at that particular time they conceive that the blood ſhould not receive any additional commotion: but on the eruption coming out, which is generally in three days, they again reſume the cold water and continue it to the end of the diſeaſe, in order to expel all the remains of noxious matter from the internal parts.

Mr. Holwel affirms, from his own experience in India, that when puſtules have ſunk, and the ſick appeared in the moſt imminent danger, he has ſeen marvellous effects from a few gallons of cold water thrown over the head: the puſtules which had ſubſided filled again ſuddenly by this ſimple remedy, as if by enchantment. In caſes of Meaſles, which did not come out freely, and where there ſeemed great anxiety and proneneſs to faint,

Rhazes

Rhazes adviſed immerſion in cold water and frictions. In India, the water is poured out of buckets by ſervants without intermiſſion, and at the diſtance of ſix or twelve inches above the head. Its ſhock and ſeverity in this mode of application is ſaid to be much greater than by immerſion of the whole body in a cold bath. The Bramins ſuppoſe that the ſudden ſhocks haſten fermentation, and by increaſing the motion of the heart, drive all offenſive particles from the internal parts to the ſurface and extremities.

The variolous puſtules when ripe, are all opened with a ſmall pointed thorn. The Bramins perſevere with aſtoniſhing patience and diligence in this work for ſeveral hours at one time; opening by degrees all the puſtules, whether the diſeaſe be mild or otherwiſe, and whilſt the matter is in a fluid ſtate. This evacuation, they ſay, prevents inflammations, weakneſs of the eyes, boils, and other eruptive diſorders, which frequently follow Small-pox; it alſo prevents, or at leaſt mitigates the danger of ſecondary fever in the height and turn of the diſeaſe. In the confluent Small-pox it is obſerved, that the puſtules often fill repeatedly after being opened *five*, *ſix*, and even to *eight* times; by this aper-

ture they are ſucceſſively emptied, and room allowed for what remains to diſcharge by the outlets which nature points out. Every puſtule is conſidered as a ſmall abſceſs or boil that has reached the point of maturation, and whoſe matter ſhould be drained off, by an external opening. About a dozen puſtules are opened at one time, then the matter is abſorbed with a linen or cotton rag dipped in warm water and milk; in this way they proceed over the whole body, face, and extremities. The ſlender conical thorn is preferred to a broader inſtrument, becauſe the external air is not admitted through ſo ſmall an orifice, to cloſe up the excretory veſſels, and the further ſecretion of variolous matter. If the puſtules were rudely opened, a violent inflammation might be excited. In the confluent Small-pox, the puſtules often fill again before the operator has half finiſhed, but he ſuffers a few hours to elapſe before repeating the operation.

A COOLING diet is preſcribed through the diſeaſe. The Inoculated are forbidden to confine themſelves to the houſe, and are expoſed to every wind that blows; all the fruits with which the climate abounds are permitted, ſuch as plantain, ſugar-cane, and water melons;

melons; and cold water, or rice gruel, uſed for common drink. The number of puſtules from Inoculation in that country, are generally from *fifty* to *two hundred*. A diſcharge from the ſcarified part where the variolous poiſon is inſerted, generally follows throughout the diſeaſe; but even if this running enſues with a few puſtules about the wound, yet none upon the reſt of the body, the perſon need have very little apprehenſion of being ever again ſeized with the diſeaſe. This exactly correſponds with the obſervations of European Inoculators.

INOCULATION in India, Mr. Holwel informs us, has to encounter prejudices as in Britain, but almoſt all recover; and he aſſures us, that though the infection is multiplied by means of Inoculation, yet, that the diſeaſe is very little ſpread from that cauſe in the natural way; nor does this accumulation of poiſon add to the malignity of natural Small-pox, which in India are exceeding fatal.

THIS ingenious gentleman during twenty-eight years, in which he reſided in India, and in the province of Bengal, obſerved that every *ſeven* years, Small-pox returned periodically, and always proved of a malignant kind.

kind. If the ſeptennial recurrence ſhould be found after a longer trial, a century for inſtance, to be a conſtant law, it would be an additional circumſtance in favour of the Pythagorean or harmonic number. During the hot ſeaſon in March, April, and May, this periodical virulent Small-pox rages with unbridled fury amongſt natives and foreigners, until the rains in June abate its fury. For this reaſon the Inoculators uſually begin their work in February, before the return of the natural diſeaſe is expected, and that diſpoſition of the air favourable to rouſe the dormant venom into activity. In the rainy ſeaſon there, Mr. Holwel has ſeen a malignant Small-pox, which killed numbers, ſo early as the ſecond or third day. He has remarked in this peſtilential ſpecies, that turkeys, capons, fowls, poultry, and other ſpecies of the feather'd tribe were ſeized with the infection and died in conſiderable numbers, as in caſes of the plague. A parrot that died of this diſeaſe he opened, and found the inteſtines lined with puſtules. Authors have mentioned ſome few inſtances in England, where a highly malignant Small-pox infected poultry and pigeons.

LETTERS written by ſome miſſionaries of Rome, who had embarked for China, on the fruitleſs

fruitleſs errand of converting that nation to chriſtianity, relate, that Inoculation was practiſed there one hundred and forty years ago, and conſequently before its introduction into this iſland; but poſterior to India. The Chineſe method was to roll up in cotton, a few of the dried ſcabs that had fallen off from the variolous puſtules; ſmall pledgets of theſe were put up the noſtrils, and in that way the diſeaſe communicated: or the dried ſcabs powdered and ſnuffed up the noſe, anſwered the ſame purpoſe. Dr. Mead, 1721, made the experiment of Chineſe Inoculation upon one of ſeven condemned criminals in Newgate, and of the Turkey practice upon the other ſix, all of whom by that means obtained a pardon. The Brain in the former caſe, was found to be dangerouſly affected; and in all probability, the Chineſe practice will not hereafter be revived nor imitated by any nation.

The Cruſades undertaken by the Chriſtians in the eleventh and twelfth centuries, in order to expel the Saracens from the Holy Land, had been the means of introducing Arabian ſcience and books into Europe: Rhazes, and Avicenna the two earlieſt writers of repute on Small-pox, together with a few Arabic tranſlations of the Greek and Roman authors were then imported.

1492 Hiſpaniola, an iſland ſituated at the weſtern verge of the Atlantic, was diſcovered by Columbus, and by other adventurers in ſucceſſion, the reſt of the extenſive continent of America. In Hiſpaniola, Columbus's ſailors caught the Venereal diſeaſe from the Indian females, and imported it to Europe, where ſuch a diſtemper had never before been heard of, nor in any other part of the old world. A general exchange of diſeaſes, remedies, and natural productions ſoon enſued between Europe and the new diſcovered continent of America. In return for the venereal diſeaſe, the Europeans *firſt* communicated that dreadful ſcourge of the human race, Small-pox to the American Indians. There at different intervals it committed ſuch inexpreſſible carnage amongſt the unſeaſoned natives, as had nigh depopulated that continent. In 1520 the infection was carried into Mexico by a negro ſlave of Spain, when half of thoſe infected died of the diſtemper: in 1588 it was carried into Peru, and ſtill later into Paraguay, where Small-pox are ſaid to have proved more fatal than in any other part of the world, hardly any recovering from the diſeaſe.

EUROPE and America were but lately ſupplied with the only ſafe and defenſive ſhield,

worthy

worthy of divine original, againſt this inveterate enemy. Our earlieſt information in Britain of Inoculation, and its utility in ſurprizingly diminiſhing the mortality of Small-pox, was from Emanuel Timoni, a Greek phyſician, in a letter to Dr. Woodward, and dated at Conſtantinople, 1713. In 1715, in another epiſtle from the ſame author to the Royal Society, he ſays that, forty years before the above date, Inoculation had been introduced into the capital of Turkey, from two of the Aſiatic provinces bordering on the Caſpian Sea, Circaſſia and Georgia. Another eye witneſs of Inoculation in Turkey, Kennedy, an Engliſh ſurgeon, in the ſame year with Timoni, publiſhed ſome obſervations on the ſubject. Pylarini's account of Inoculation, by a Greek woman in Conſtantinople, where he then practiſed medicine, was publiſhed at Venice, 1715. The Turks, as Mahometans and fataliſts, and obſtinately attached to the dogmas inculcated in the alcoran, which command them not to fly even from the plague, rejected Inoculation, and it was adopted only amongſt the Greeks, Armenians, and Chriſtians. At Egypt, Tunis, Algiers, Tripoli, and other provinces

 ſubject

ſubject to Turkey, Inoculation had been long known: probably the practice was carried to theſe countries, by the provincial ſoldiers ſent from Circaſſia.

Besides the ſecurity afforded by Inoculation, we learn that the Circaſſians and Georgians were induced to this practice by an additional and powerful motive, avarice, in order to preſerve the beauty of their female children, and to ſell them at higher prices to the rich Turks and Perſians as miſtreſſes. The variolous matter they transferred by ſeveral ſcratches made in different parts of the body, dipping the point of the needle into a ripe puſtule, or into a nutſhell full of variolous poiſon. Many Greek women at Conſtantinople, exerciſed the function of Inoculators. They alſo, unneceſſarily, made four or five ſcratches, reſembling, in moſt reſpects, the Circaſſian method: a plaſter was laid over theſe punctures, and after ſeven or eight days, a ſlight fever or ſickneſs enſued, ſucceeded by an eruption of puſtules; but ſeldom or ever any violent ſymptoms or ſecondary fever, ſo fatal in the natural Small pox at their height, were obſerved to accompany the Inoculated. Timoni reports, that they were in-

different

different whether the variolous infection was engrafted from natural, or artificial puſtules.

In 1717, Lady Mary Wortley Montague, the elegant letter-writer, and wife to the Engliſh Ambaſſador at Conſtantinople, had her ſon inoculated in that Capital, by Maitland, an Engliſh ſurgeon. On this Lady's return to England in 1722, her daughter, Miſs Montague, was inoculated by a ſingle and ſlight inciſion on the arm, and is the firſt perſon of any rank inoculated in this iſland. A few months after, the young Princeſs Royal, and ſome of the royal family followed this example. In the preceeding year it had been ſucceſsfully tried upon ſeven condemned malefactors in Newgate, who on that account received a pardon.

Fears and ſtrong prejudices ſtill prevailed againſt a practice ſo novel. Several phyſicians wrote againſt Inoculation: they condemned it as a hazardous experiment, as tending to multiply infection, and, as they argued, the number of deaths: they alſo alledged, that in the ſmall portion of variolous poiſon, other hereditary diſeaſes might be communicated. Many divines and fooliſh bigots, inflamed with a miſtaken zeal, preached againſt the practice as impious, and an

inſult to the divine decrees; they exclaimed that it bore a ſtronger reſemblance to magic than to phyſick; and to crown this fiery rhapſody, that the devil had Inoculated Job. Others with ignorant effrontery aſſerted, that Inoculation would not prevent the attack of the natural diſeaſe. A variety of other objections and falſehoods were invented to depreciate this important diſcovery. In 1723, a conſiderable mortality happened in London by Small-pox, which the opponents aſcribed to Inoculation; but Dr. Jurin proved, that the mortality by this diſeaſe was in January and February, and that no perſon was Inoculated before the twenty-ſeventh of March, and then a very ſmall number. The ſeverity of this natural epidemic notwithſtanding contributed with the cauſes before mentioned, to increaſe the public diſtruſt, and to turn Inoculation into diſcredit.

Dr. Jurin, from 1723 to 1727, publiſhed ſeveral detached papers in the Philoſophical Tranſactions, comparing the mortality of natural Small-pox, and the numbers loſt by Inoculation. From a great maſs of materials, and many thouſands of ſick in different parts of England, he found that one of five or ſix, at a medium, died by the natural diſeaſe;

diſeaſe; this is the general reſult of later and more enlarged calculations. In Turkey, in the northern parts of Europe, and in Africa, Small pox is ſtill more fatal: In ſeveral inſtances it has been ſo virulent, as to kill nearly one half of the infected.

AGAIN, of thoſe then Inoculated, one of fifty, died: but amongſt them were included young infants, many of whom are cut off by convulſions, which was laid to Inoculation; and ſome aged perſons, pregnant women, and valetudinarians. Beſides, a very few trials only had been made of its ſucceſs: Jurin's liſt of all the Inoculated in London, and other parts of England, from 1721 to 1727, amount only to ſeven hundred and ſixty four. Inoculation was carried to Boſton in North America, in 1722, and attended with the ſame happy effects as in London, amongſt the handful who had reſolution enough to intruſt their lives to that protection.

I SHOULD not omit to mention, that in a part of our iſland called Wales, a cuſtom prevailed before the introduction of Inoculation from Turkey, of engrafting the Small-pox, and ſometimes with ſuperſtitious practices A ſmall wound or ſcratch was made with a pin,

a pin, or the point of a knife, and the variolous matter rubbed in; now and then the pocky ſcabs were merely rubbed in the hollow of the hands. Dr. Williams, a phyſician of Pembrokeſhire in Wales, firſt informed Dr. Jurin by letter of this practice; it was there a very ancient cuſtom amongſt ſeveral individuals, and could not be traced back to its origin by the oldeſt perſons: the ſame fact is well authenticated by collateral evidences. A ſimilar cuſtom prevailed in ſome parts of Denmark in the laſt century, and is related by Bartholine; but the bulk of both nations, and medical men univerſally ſeem to have been entirely ignorant of, or to have overlooked this domeſtic practice: it appears to have been very ſeldom exerciſed, and its peculiar advantages over the natural diſeaſe, concealed from the world until we received illumination from Turkey.

Inoculation from 1727, languiſhed in England until 1738, when it was again revived, and this iſland had the courage and good ſenſe to ſet the example to the reſt of Europe. In 1738, of two thouſand Inoculated in the counties of Suſſex and Hampſhire, but two died; and in the ſame year of one thouſand Inoculated at all ages in North America, but

eight

eight died. Middleton Inoculated eight hundred, and loſt but one. Other Inoculators loſt one out of three and four hundred. In the Iſland of St. Kitt's, of three hundred negroes Inoculated, not one died. Ranby Inoculated a thouſand and without one blank. In 1746, a ſmall charitable Hoſpital was erected at Pancras, in the environs of London, for the double purpoſe of Inoculation, and to receive during their ſickneſs, perſons of indigent circumſtances who ſhould be ſeized with natural Small-pox. Of eighteen hundred Inoculated in this hoſpital in the courſe of ſeveral years, but eight died. At another period, of four hundred and ninety-ſix Inoculated at this aſylum, but one was loſt. In the year 1759, the numbers Inoculated at Pancras were, five hundred and ninety-three, and many of thoſe adults, yet but one died. The Suttons of late years, by their own computation, Inoculated throughout London, and many parts of England about forty thouſand, and as they aſſert did not loſe one hundred.

In one thouſand, ſeven hundred and forty-eight, Inoculation was introduced into Amſterdam: in 1752 and 54, it was admitted into Italy and France. In Italy, a malignant

malignant Small-pox was then committing ſevere ravages amongſt the inhabitants; on this diſtreſſing occaſion, ſeveral mothers dreading the deſtruction of their whole family, from the uncommon mortality of the natural epidemic, Inoculated their children when ſleeping, and with the deſired ſucceſs. Mr. Condamine's different papers read before the French academy, on the great advantages reſulting from Inoculation, contributed eſſentially to its reception into France. In 1755 they began to Inoculate at Stockholm, the Capital of Sweden. Haller and Tiſſot near the ſame time laboured ſtrenuouſly to introduce the practice into Switzerland: on the other hand, De Haen of Vienna, and phyſician to the royal family, wrote impetuouſly againſt the innovation, and was ably replied to by Tiſſot. Of one thouſand two hundred Inoculated, (1764.) in Sweden, not one died. In Penſylvania and other provinces of North America, of eight thouſand Inoculated, only nineteen died, or one of four hundred and ſixty-ſeven. Dr. Gatti, a profeſſor of medicine, in the univerſity of Piſa, in Italy, Inoculated one thouſand, and without a ſingle miſcarriage. At this day it is an eaſy matter to multiply piles of ſimilar examples, accord-

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According to the immature calculations of Jurin, of thoſe Inoculated *one* of *fifty*, and of Dr. Mead *one* of *every hundred* died; but by the accounts of later date, collected by practical Inoculators and Phyſicians, on an average, only *one* of every *five hundred* Inoculated die: from the general tenour of Mr. Holwel's pamphlet, this laſt proportion would ſeem to hold good alſo in India, and in ſupport of this calculation, a variety of facts have been laid before the reader.

THOUGH the ſucceſs of Inoculation is aſtoniſhing, and the mortality of Small-pox by that means almoſt miraculouſly leſſened; yet long habits, ignorance, and ſuperſtitious prejudices obſtructed its admiſſion for a long time; it had to encounter in every kingdom an hoſt of opponents, and by very ſlow degrees got a footing. The practice even at preſent is far from being ſo univerſally authorized and encouraged as it merits. I ſhall hereafter demonſtrate, that in England, but more particularly in London, Inoculation is unfortunately by no means ſo general as writers have ſuppoſed.

AMONGST the vague objections urged againſt Inoculation, it was affirmed that the natural diſeaſe might afterwards return.

Maitland and all the writers who were acquainted with the practice in Turkey, flatly contradict this looſe aſſertion. The veracity of the few rare caſes of that kind produced, are extremely ſuſpicious, and do not probably amount to one in a hundred thouſand: ſome equally ſingular caſes are related of perſons undergoing the natural diſeaſe a ſecond time; but they both happen ſo ſeldom, as to be trifling exceptions to a general law. It has often been tried in Turkey, and other kingdoms of Europe, by a ſecond Inoculation, and by putting them into a bed with perſons ill of natural Small-pox, but in either way found impracticable to renew the diſeaſe. Others ſurmiſed that ſome hereditary diſeaſe might be inſtilled together with variolous infection: univerſal experience proves this to be a chimerical conjecture, and in the natural diſeaſe there is greater danger of ſuch imaginary combination of Infections; for in chuſing variolous matter it is eaſy to ſelect it from healthy conſtitutions. Experiments have been made with variolous matter taken from perſons labouring under the venereal diſeaſe, yet the latter infection was not ingrafted with Inoculated Small-pox.

INOCULATION ſeldom or ever fails to convey the diſeaſe. The puſtules are in general few; and although only one or two ſhould appear, the perſon is ever after ſeaſoned againſt that diſeaſe. In Europe and India, there have been numerous inſtances where no puſtules appeared, but only a ſlight inflammation, and afterwards a ſuppuration of the ſcarified part, in which the variolous matter was ingrafted; yet no Small-pox have afterwards enſued.

EXCLUSIVE of the immediate havock by this direful diſeaſe in the natural way, numbers who ſurvive are diſfigured; in multitudes of others, the diſeaſe is followed by complaints of the breaſt and conſumptions, and a conſiderable number too annually in this iſland are deprived of their eye ſight. No bad ſymptoms of this kind follow Inoculation; ſeldom any conſiderable ſickneſs or ſecondary fever attend it. Infection has been taken from a virulent malignant Small-pox, and in the way of Inoculation produced a mild diſeaſe.

CALCULATIONS make but a ſmall ſhare of adults to have eſcaped the attack of Small-pox: in great cities perhaps fewer live to mature age,

and reſiſt variolous infection. In them eſpecially it is prudent to anticipate ſurrounding danger and certain hazard. Entire families have frequently been exterminated, and cruſhed in one general ruin by this diſtemper: certainly both ſexes who are arrived at the age of puberty, and who have not paſſed over this perilous abyſs, cannot but feel on many occaſions uneaſy ſenſations of apprehenſion and dread. A ſuperſtitious argument has been uſed by weak bigots to diſſuade the world from Inoculation, becauſe a few happen to die under the artificial diſeaſe; but this argument is much more powerful againſt matrimony and population, for about three of every two hundred women die in childbed, or of diſeaſes attending that ſtate.

In the preciſe mode of ingrafting variolous infection, Authors and Inoculators are not agreed: the Bramins and ſeveral of the European profeſſed Operators make only one ſimple inciſion; others with us make one gentle inciſion on each arm, to be ſure of conveying the poiſon, and to prevent a poſſibility of miſcarriage. Cotton is uſed by ſome, by others a thread, each impregnated with matter from a ripe puſtule; theſe are laid on the ſcratch or wound, and over all a plaſter.

plaſter. Some again dip the point of a lancet, others a needle or pin into a puſtule, and by a ſlight ſcratch in both arms convey the diſeaſe: this may be done to children during ſleep, and no plaſter is required. The Bramins uſe the artificial matter of the preceding preſerved in a bottle cloſe ſtopped; Inoculators with us generally employ freſh matter, and taken indifferently from natural or artificial puſtules. Some preſcribe elaborate and complicated preparation by diet, mercurials and purges, previous to inſerting the variolous infection. Dr. Gatti, before mentioned, and who wrote a ſenſible treatiſe on this ſubject remarks, and I believe juſtly, that the more ſimplicity is uſed in transferring the diſeaſe artificially, the practice and publick benefit are likely to be more univerſal. Several of our European Inoculators often, with officious induſtry, exerciſe a ſuperfluous preparatory parade of profeſſional and ſcientific craft: young children eſpecially may diſpenſe with many of theſe redundant ceremonies.

The introduction of Inoculation into England, and into other parts of Europe, the controverſies maintained for and againſt the practice, together with its ſucceſs, may be learned from Dr. Jurin's papers, from Dr. Kirkpatrick's

Kirkpatrick's Hiſtory of Inoculation, and from "Hiſtoire de l' Inoculation, par Mr. de La Condamine." An alarm has been lately created againſt general Inoculation in London and other great cities; and it is repreſented as big with danger to the public ſafety; I hope effectually to anſwer all thoſe objections.

The London Bills of Mortality ſhow, that within the laſt hundred years, in this city alone, upwards of two hundred thouſand perſons have been cut off by one ſingle diſeaſe, Small-pox. As in all other epidemical diſeaſes, ſo in Small-pox, there is a fluctuation in the deaths, ſome years they are high and in others lower; but examine the London Bills ſo far back as 1629, when the diſeaſes of thoſe who died were firſt inſerted, you will not find in all the interval from that down to the preſent time, that deaths by Small-pox in any one year, ever amounted to four thouſand. 1772, which is the higheſt riſe, they ſtand at three thouſand, nine hundred and ninety-two. "communibus annis" about two thouſand annually are deſtroyed in London by this unrelenting foe.

We are to remember, that in ſeveral populous pariſhes the births and deaths are not regiſtered,

giſtered, otherwiſe the London catalogue of funerals would appear conſiderably greater; and that from 1629 to 1733, twenty large pariſhes have been added to the original bills: to judge fairly therefore of the effects of Inoculation in London, we ſhould not go far back into thoſe records. Comparing the deaths now with the bills when firſt inſtituted, has miſled many eminent phyſicians and calculators, who proceeded to draw erroneous deductions reſpecting the increaſe or diminution of mortality by the modern practice of Inoculation.

Let it be ſuppoſed, that two thouſand annual deaths by Small-pox fall out of ſix hundred thouſand inhabitants in London, and contained within the biſls. I only mean to ſettle groſs proportions, and to come near the truth; and computing the inhabitants rather more numerous than what ſome calculators will allow, is for our purpoſes a ſafe error. If out of ſix hundred thouſand inhabitants, two thouſand die annually of Small-pox; then throughout *nine* millions in Britain and Ireland, *thirty* thouſand annual deaths may be ſet down to this diſeaſe. Numbers without doubt in the country live and die at an advanced age, without undergoing this diſtemper; place the entire

tire national loſs of the two kingdoms at a half, or even diminiſh it if you think proper to a third, ſtill it will be obvious, that by conſtantly operating, more of the inhabitants of a nation are ſwept away by Small-pox alone, than by the moſt bloody wars, which break out at diſtant intervals only, after a hollow truce of ſeveral years pacification.

Baron Dimſdale had the honour to be ſent from England in order to Inoculate the preſent illuſtrious Czarina of Ruſſia. He there publiſhed a treatiſe on the benefits of Inoculation; and ſince that it has been reprinted in London with the Barons additional annotations. This Author ſays, page 15th, "we ſee that even in London, where the cli-"mate is temperate, the diſeaſe well known, "and the treatment of the ſick very ably "conducted, this *ſingle diſeaſe deſtroys more* "*than the eighth part of the Inhabitants*" and in page 16th, he proceeds thus: "If "therefore in London which enjoys the ma-"ny advantages already recited, *more than* "*two thouſand perſons die annually of Small-*"*pox*, we may ſurely ſuppoſe that the loſs "which Ruſſia in its whole extent ſuſtains

"in

" in the *ſame ſpace of time* amounts to *two* " *millions* of ſouls."

THE Baron's laſt propoſition is manifeſtly erroneous, it is an exaggerated calculation, repugnant to fact and reaſon. Allowing that through Great-Britain and Ireland, the mortality of Small-pox keeps pace with London, and that out of nine millions of inhabitants, thirty thouſand fall annual ſacrifices to this diſeaſe; how many can we rationally conclude would be the total mortality throughout Europe in the ſame period? Mr. Voltaire, if I recollect right, calculates the inhabitants of Europe at one hundred and ſeven millions; probably one hundred and twenty millions, the number formerly ſaid to be contained in the Roman Empire under Trajan and the Antonines, will be a more exact eſtimate. On this ſuppoſition, and taking Britain and Ireland as a radix, the annual deaths by Small-pox throughout all the kingdoms of Europe, will amount only to *four hundred thouſand*.

RUSSIA by ſeveral calculations contains fourteen millions of inhabitants: no authentic enumeration that I have conſulted makes the ſubjects of that Empire to exceed ſixteen millions; and in theſe are included all who inhabit the extenſive and inhoſpitable deſerts

of their Aſiatic dominions in Siberia. It is therefore impoſſible that *one eighth* of thoſe, or two millions, can be annually cut off by all the diſeaſes put together: 1 of 32, embracing Town and Country, is nearer the uſual decreaſe. There is no kingdom in Europe comparatively, that ſuffers one third, very few one fourth of the annual waſte by every deadly diſeaſe, which Baron Dimſdale aſſigns to Small-pox alone in Ruſſia. An "actual Counſellor of State", a title annexed to Baron Dimſdale's Ruſſian honours, ſhould be a little better informed in hiſtory, and political arithmetick, and particularly in the number of the Ruſſian inhabitants; but "*one of the Body Phyſicians to her Imperial Majeſty*" ſtands inexcuſable in promulgating ſuch wandering notions of ſubjects intimately connected with his own profeſſion.

I CAN readily grant, that in Ruſſia the diſeaſe is more fatal than in Britain; but yet when we reflect upon the wide and dreary extent of the Ruſſian Empire, the ſmall proportion of inhabitants, their imperfect communication and difficult intercourſe, and that many parts are rude and uncivilized; great numbers muſt be ſuppoſed to live and die without being viſited by variolous contagion. I am willing to make every conceſſion in favour

vour of Baron Dimſdale; let Small-pox in Ruſſia be as inhuman as he chuſes, and armed with the moſt incredible ferocity; if one eighth or two millions of the inhabitants are annually deſtroyed by it, then in the ſhort ſpace of a ſingle year, all other diſeaſes ſweeping away the remaining ſeven parts, every human ſoul in the Czarina's dominions would be entirely exterminated, the country reduced to a deſart, and over run with wild beaſts.

OF

GENERAL INOCULATION IN CITIES.

A QUESTION of infinite magnitude and importance to mankind, now remains to be diſcuſſed, whether by Inoculation in London and other great Cities at the private houſes of the Inhabitants contagion is not more likely to be diſperſed, and upon the whole the community at large to be more injured than benefited by the practiſe?

LATELY this ſubject has been canvaſſed in printed publications by medical gentlemen of great profeſſional abilities. One ſide has recommended general Inoculation throughout Town and country, and a Diſpenſary has been erected upon thoſe humane motives, in order to render the effects more extenſive. All the Poor who chuſe to apply for themſelves or families are to be Inoculated gratis, and where the caſe is attended with any danger, they are to be furniſhed with medicines and medical advice at their own habitations.

THIS

THIS ſcheme dictated by benevolent humanity and diſintereſted patriotiſm has been oppoſed by Baron Dimſdale, and unfortunately for the publick with too much ſucceſs; the attempt is calumniated by him with conſiderable heat, and paſſionate zeal. Public appeal has been made. Baron Dimſdale has printed ſeveral pamphlets on the back of each other, to repreſent the general Inoculating inſtitution as "rash, inconſiderate, and highly dangerous." He arraigns his medical antagoniſts with "urging artful untruths, and notori-
"ous falſehoods; he accuſes them of want-
"ing common honeſty and humanity." In ſome of his lateſt pamphlets, he ſuggeſts as a "ſimile in point, "that an action of damages "would lie againſt a perſon who by Inoculating "*horned cattle* for a contagious diſeaſe, ſhould "ſpread it in the neighbourhood." We are to obſerve, that Baron Dimſdale's interdictions are "ſolely directed againſt Inoculating the poor, "laborious, and middling claſſes of people at "their own houſes," for in all his publications he allows that the "*rich and gentry may* "*ſecure their families by timely Inoculation.*" Indeed it is a principal part of his own practice in London.

I SHALL

I SHALL endeavour to ſtate with equal candour, and with as much brevity as poſſible the arguments advanced by each of the diſputants. Of all the publications upon this controverſy, I ſhall exhibit to view but two, that of Baron Dimſdale, and another the joint production of two very learned Phyſicians, Dr. Watkinſon, and Dr. Sims; the two gentlemen who firſt recommended a Diſpenſary, and offered their ſervices without fee or reward, to render Inoculation more general and uſeful to London and to the Nation.

BARON Dimſdale, the leading and ardent champion againſt general Inoculation in London, "at the houſes of the laborious poor, "and middling trades people" reſts his oppoſition upon the following principles: I give the abſtract and ſubſtance in his own words. I muſt alſo do the Baron the juſtice to ſay, that ſeemingly, he has urged, and exhauſted every ſhadow of argument on that ſide of the diſpute.

"THOUGH the loſs under Inoculation is "very inconſiderable, *almoſt the whole* of thoſe "that are Inoculated recovering, yet by "ſpreading the diſeaſe, a greater proportion "take it in the natural way: *more lives* are "now loſt in London than *before Inoculation* "*commenced*,

" *commenced*, and the community at large ſuſ-
" tains a greater loſs: the practice therefore
" is more *detrimental* than *beneficial* to ſoci-
" ety. In the laſt four years preceeding
" 1776, the London Bills from Small-pox
" aroſe at a medium to two thouſand, five
" hundred and forty-four: this increaſe is
" truly alarming." The diſeaſe by general
" Inoculation throughout London, ſpreads by
" viſitors, ſtrangers, ſervants, waſher-women,
" doctors and inoculators; by means of Hack-
" ney Coaches, in which the ſick are ſent out
" to take the air, or by ſound perſons ap-
" proaching them in the ſtreets."

" THE poor in London are miſerably
" lodged; their habitations are in cloſe alleys,
" courts, lanes, and old dirty houſes: they are
" often in want of neceſſaries, even of bed-
" ding. The Fathers and Mothers are em-
" ployed conſtantly in laborious occupations
" *abroad*, and cannot attend the inoculated ſick;
" ſhould they neglect their occupations, food
" and neceſſaries would be deficient, and the
" medicines and diet ordered by the phyſicians
" would not be regularly complied with.
The air in their houſes is impure: they
" have neither areas, gardens, nor *carriages*

" for

" for the convenience of ventilation, and " taking freſh air.

" Sailors and ſea-faring people, many of " whoſe lodgings are miſerable in the little " houſes bordering on the river, would be " liable to catch the diſtemper, and either to " fall ſick there without friends or aſſiſtants, " or perhaps being infected on ſhore, to car- " ry it to ſea in their contaminated cloathes, " and afterwards falling ſick without care or " attendance, might ſpread the diſeaſe in fo- " reign climates."

" COUNTRY people coming to town for " markets, viſits, or pleaſure, would all be " ſubject to the danger of infection. Perſons " coming from the ſick to the general (Inocu- " lating) Diſpenſary, for medicines or ad- " vice, by intermixing in the ſtreets, the *public* " danger from their infected apparel would be " *great* and inevitable: the whole neigh- " bourhood would be expoſed, and in immi- " nent danger, by having the Small-pox " brought to their doors. The goſſiping " diſpoſition of the poor will ſpread it fur- " ther, and after the ſick recover ſallying " forth in their infected cloathes, is certain " to add to the miſchief. The children who " are able to run about will intermingle in

" the

" the ſtreets, immediately upon their recove-
" ry, with their play-fellows: the ſucceſs
" therefore derived from general Inoculation
" will be beneficial to a *few* only, but in-
" volve a great number of others in danger,
" which they would otherwiſe be leſs expo-
" ſed to."

As a remedy againſt all thoſe inconvenien-ces and dangers from Inoculating the poor and middling trades people at their own houſes; Baron Dimſdale addreſſes himſelf " to " the legiſlature of Great-Britain, and to the " charitable contributions of the rich and " humane, to enlarge the Inoculating Hoſ-" pital at Pancras, adjoining to the city." This Hoſpital at preſent (if I am not miſinformed) makes only *one hundred beds*, and none are admitted under ſeven years of age.

" THE *rich* (continues Baron Dimſdale) a-" vailing themſelves by timely *Inoculation*, " *ſecure their families*, but the loſs falls " chiefly on the offspring of inferior trades " people, and the labouring poor. To en-" courage partial Inoculation amongſt them " would be only ſpreading the diſeaſe amongſt " their neighbours, and encreaſing the evil. " In Country Towns, large Hoſpitals will " not be required: It will be *neceſſary only* to

" obtain the *unanimous conſent* of all the inha-
" bitants of a town, diſtrict or pariſh to be
" Inoculated at one and the ſame time: for
" if ſome only are Inoculated, and others
" excluded, the diſeaſe will ſpread through
" the vicinage, and be fatal to many. In
" London and other great cities, ſuch *general*
" *conſent* of thoſe who have not undergone
" Small-pox, cannot be had to ſubmit to
" Inoculation." This the Baron juſtly conſi-
ders as an impracticable chimera, and never
to be accompliſhed. " He adds, that before
" Inſtitutions of this kind (the Inoculating
" Diſpenſary) ſhould be tolerated: the le-
" giſlature ought firſt to be conſulted."

THE danger of multiplying and ſpread-
ing variolous infection by general Inocu-
lation, is obviouſly the main pillar, and
prop, upon which Baron Dimſdale builds
all his arguments and rhetorick. To
obviate this ſuppoſitious danger the gentlemen
who patronize general Inoculation amongſt
the poor and laborious orders at their own
houſes aſſert, " that the inſtances are ex-
" tremely rare, where the diſeaſe is ſpread
" from Inoculated perſons ſo as to excite
" Small-pox in the natural way": to prove

this

this they appeal to facts and experience; they quote a number of eminent Authors, practical Inoculators, and other vouchers of reputation not only in Britain, but in different parts of Europe, all of whom expreſſly maintain, "*that from the Inoculated, few if any catch* "*the diſeaſe in the natural way.*" Mr. Holwel's obſervations in India where Inoculation is very general, corroborates this propoſition.

In reply to thoſe proofs, Baron Dimſdale from his *own authority*, and inſtances which fell under his perſonal inſpection contradicts their facts, and affirms, that infection may be communicated by Inoculated perſons, and excite the natural diſeaſe. The Circaſſians or Eaſt Indians, would be good evidences to this point of diſpute. The gentlemen further ſay, and are confirmed by the teſtimonies of all experienced Authors, "that a "certain diſpoſition of the air (not well under-"ſtood) is neceſſary to give the contagion of "Small pox activity, and to propagate infec-"tion in the natural way. They ſay too, "that from an Inoculating Hoſpital, the re-"medy propoſed by Baron Dimſdale, chil-"dren under ſeven years of age can "derive no advantage; and that in large

" Hoſpitals the air is rather more impure " than in the meaneſt private houſes."

THERE never was in my opinion ſince the origin of phyſick, a medical controverſy agitated of more conſequence to mankind. It is not only a medical, but alſo a political, and a great national queſtion. Intellectual wars without number have been waged in Literature, Philoſophy, Medicine and Metaphyſicks, from which few, except perhaps Bookſellers, have reaped any active benefit. The preſent ſubject is not a matter of mere ſpeculation; abundant evidence has been laid before the reader of the immenſe carnage made by natural Small-pox, and of the inconſiderable number loſt by Inoculation; but if in cities, none but the *rich* are to partake of the benefits of timely Inoculation; if it is not tolerated to the children of the poor and laborious ranks, until they reach ſeven years of age, and even then in a large Hoſpital, its advantages muſt be partial, and limited to a very ſmall ſhare of the community. For all theſe reaſons the enquiry ſhould be conducted with candour and ſerioufneſs; no bigoted attachment to pre-conceived hypotheſis, no jealouſy, rancour of party, ſelfiſh intereſt, nor ſtubborn pride, ſhould be ſuffered to exaſperate our temper,

and

and to pervert our judgment. If the ſentiments delivered by me in vindication of general and univerſal Inoculation, can be controverted by facts, and ſound criticiſm, I ſhould not be aſhamed publickly to retract and to confeſs my errour.

I ſhall endeavour to anſwer all Baron Dimſdale's objections one by one, in doing which, I truſt to prove, beyond contradiction, that his ideas of this ſubject are capricious and ſhort ſighted, and that his ſcheme is crude and exceeding faulty. All great cities in Europe are deeply intereſted in the deciſion of the utility, or injury from general Inoculation; the arguments which apply to London are equally valid, in every metropolis and in leſſer towns. The reader is here to ſit in judgment, and to give his opinion upon a conteſt, which is in its public determination and general conſequences, involves the deareſt concerns of thouſands.

" THOUGH the loſs (ſays Baron Dimſdale) " under Inoculation is very inconſiderable, " almoſt the whole of thoſe that are Inocu- " lated recovering; yet by ſpreading the diſ- " eaſe a greater proportion take it in the na- " tural way, *more lives are now loſt in London*

" *than*

" *than before Inoculation commenced*, and the " community at large ſuſtains a greater loſs; " the practice therefore is more detrimental " than beneficial to ſociety."

SUCH were the terrours held out to diſſuade every nation from encouraging Inoculation amongſt them, upon its firſt introduction from Turkey. If the argument is good for any thing, it muſt militate in every caſe againſt Inoculation in private houſes, particularly in London and other cities, and even in the country, whether rich, gentry, or poor; becauſe, according to Baron Dimſdale, the infection is in that way ſpread, and the publick loſs greater. Why therefore it may be aſked, does Baron Dimſdale labour all in his power to increaſe the diſperſion of variolous infection, and to injure the community at large, by Inoculating all rich perſons in London and its vicinity, who employ him? Do not his actions flatly contradict his oſtenſible cares for the public ſafety? I am hurt at be-being under the neceſſity of deſcending from the dignity of my ſubject, and bringing home au argument rather perſonal; but the reader will perceive it is entangled in the diſpute, it is extorted from me and inevitable. When Baron Dimſdale ſtood forth the medical Goli-

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ah againſt Inoculation in London, he ſhould have foreſeen that men would be confounded with ſuch glaring inconſiſtency upon being told, that few phyſicians inoculated ſo many at private houſes in this city, and its neighbourhood, as himſelf.

"In the laſt four years preceding 1776, "the London Bills from Small-pox aroſe at "a medium to two thouſand, five hundred and "forty-four: *this increaſe is truly alarming.*"

Baron Dimſdale lays this increaſe at the door of general Inoculation diſſeminating variolous infection. As an effectual anſwer to this aſperſion, I refer the reader to the London Bills of mortality *four* years immediately preceding 1720. In 1715, Inoculation had been mentioned in a letter to the Royal Society; but for ſeveral years after, no perſons ſubmitted to the practice in London, nor in England. Now the deaths by Small-pox in theſe *four* years amount to eleven thouſand, ſeven hundred and forty-one, or nearly to three thouſand annually, before Inoculation commenced. Go ſtill further back into the bills, and before Inoculation was heard of in England; in ſome years Small-pox deaths ſwell to two, and even to three thouſand: In 1710, they amount to three houſand, one hundred and thirty-eight,

1686,

1686, to two thouſand, four hundred and ninety-ſix, 1681, to two thouſand, nine hundred and eighty-two, 1674, to two thouſand, five hundred and ſeven. In 1721, ſo cautious and fearful were they of Inoculation in London, that in that year experiment was made of its effects upon ſix condemned malefactors in Newgate, who by that means redeemed their lives. From 1722 to 1727, Dr. Jurin could collect but ſeven hundred and ſixty-four perſons Inoculated in all that interval, including London and other parts of England; and from that time to 1738, the practice fell into diſuſe; yet notwithſtanding in twelve years only, from 1715 to 1728, ſmall pox deaths in London amount to twenty-ſeven thouſand, three hundred and ſixty-ſeven. Theſe facts ſurely are ſufficient to exonerate Inoculation from adding to variolous mortality in the metropolis.

Four years beſides is too ſhort a period to erect ſubſtantial concluſions upon: there is an ebb and flow in natural Small-pox as in all other diſeaſes, eſpecially of the febrile claſs, thoſe left behind in former years are often in the ſucceeding ſwept away. Epidemical and particularly contagious diſeaſes, cannot be expected to keep upon an annual equality. In

ſome

ſome years of the London bills the burials have been double the births; here is more real reaſon for *alarm*: nor does Small-pox keep pace with the general mortality: in 1745, the annual burials were, thirty-two thouſand, one hundred and ſixty-nine, and in this number Small-pox but one thouſand, nine hundred and ſeventy-ſeven. In many other diſeaſes, both acute and chronic, the mortality of each varies in ſome degree annually; it cannot be expected to be quite ſo regular as the motions of time, or the revolutions of the planets.

London inhabitants fluctuate, which may occaſion ſome difference: beſides, in the laſt *twenty* years the total annual mortality has conſiderably decreaſed, and this is one reaſon why Small-pox appear in the four years picked out by Baron Dimſdale *comparatively* greater than formerly, amounting, as he ſays, to one eighth of the deaths. From 1720 to 1759, the proportion of deaths by Small-pox to all other annual deaths in London, were as 1 to 11, 12 and 13. Forty years is a better foundation to build upon than four. One to 13 and 14 is alſo the proportion of Small-pox mortality in Paris.

AGAIN, when two thouſand, five hundred and forty-four have died in one year by Small-pox in London, it is demonſtrable that the greateſt number of the ſick muſt have been ſeized with the natural Infection; for out of *one million* Inoculated, rating the blank at one of five hundred, agreeable to the modern, and broadeſt calculation, ſo many deaths would not have happened. Now attend to the deduction from this propoſition. The deaths being two thouſand, five hundred and forty-four, and one out of ſix dying of natural Small-pox, which is the uſual average in Britain; in this caſe fifteen thouſand, two hundred and ſixty-four, or near to that amount, underwent the diſtemper each year, in the natural way in this city. This is nearly equal to the annual births in the ſame regiſter. How many more were Inoculated, I cannot pretend to alledge. Such a multitude of variolous ſick could not poſſibly be confined to the new annual recruits, and as the majority of thoſe emigrants are advanced near the age of pubeſty, or have paſſed that period, we may infer that numbers of them have already eſcaped through the perils of Small-pox. Therefore, where fifteen thouſand,

ſand, or even twelve thouſand have in one year been infected with natural Small-pox, without adding the Inoculated; is there not a copious magazine of contagion in London to ſpread the diſeaſe? During one hundred and fifty years, that is ſince the diſeaſes were firſt marked in the bills, London has never been *one* year free from variolous infection. Baron Dimſdale, in his anxious ſolicitude and alarming apprehenſions leaſt the poor Inoculated at their own houſes ſhould diſperſe the infection, ſeems entirely to overlook thoſe fifteen thouſand perſons labouring annually under natural Small-pox; their families, friends, viſitors and acquaintances, probably amount to treble or quadruple this number: here is a large army to propagate variolous infection; they cannot be ſmuggled into a narrow corner, or penn'd up in a few ſtreets.

BARON Dimſdale ſpeaks of Small-pox in London, as if the infection was either impriſoned in the variolous Hoſpital; or as if he carried the whole poiſon in his waiſt-coat pocket, encloſed in a ſmall box or vial, and envelopped in a little cotton or thread for the uſe of private Inoculation amongſt certain

tain ranks of the inhabitants: cannot the contagion find any exit from the houſe of a rich man amongſt the reſt of the community? Or will any rational perſon conſider variolous infection in this city in the ſame light as an Egyptian plague juſt landed, and confined to a ſingle bale of goods? In fact the numbers required to be Inoculated in London, would not conſiderably exceed thoſe who now undergo the diſeaſe in the natural way; and when we reflect upon the ſmall proportion of puſtules in the Inoculated compared with the natural diſeaſe, ſo far from variolous infection being multiplied in abſolute and groſs quantity by general Inoculation, it would be greatly diminiſhed.

CERTAINLY there is every year in London, abundant variolous infection to diffuſe the diſeaſe over the univerſe, provided the communication was open, and the intercourſe general: the enemy is in every corner of the city, and leaves behind melancholy marks of his viſits, at leaſt no obſtacle prevents the infection from being daily ſcattered through the metropolis amongſt ſound perſons, by all the luxuriant train of carriers expatiated upon, and painted with ſuch ſtrong poetical colouring by Baron Dimſdale; "by viſitors, ſtran-

"gers,

" gers, doctors, inoculators, ſervants, waſher-
" women, by ſervants in the ſtreets in ſearch of
" doctors or medicines, or employed in other
" neceſſary avocations, by hackney coaches
" in which children take the air, by children
" on their recovery mixing with their play-
fellows", &c. The danger in this caſe is much greater to the public, from the infection of natural Small-pox being diſperſed, than if it had been emitted from Inoculated.

" The poor in London are miſerably lodg-
" ed; their habitations are in cloſe alleys,
" courts, lanes, and in old dirty houſes; they
" are often in want of neceſſaries, even of
" bedding; the father and mother are em-
" ployed conſtantly in laborious occupations
" abroad, and cannot attend the ſick: ſhould
" they neglect their occupations, food and
" neceſſaries would be deficient".

To this I reply, that few in London of the laborious claſſes are ſo poor as to be totally deſtitute of the neceſſaries of life and bedding. I mean that a very ſmall number die in the year, immediately at leaſt, from that cauſe. In my third table of the London bills during fifteen years, the number ſtarved

amount

amount only to seventy-eight, and in the fourth table, an equal period, to sixty-four.

By this observation I have no intention to insinuate that the laborious poor live so comfortably as should be wished. It would give me sincere pleasure if every man in England could sit down daily to roast beef and a tankard of ale, but my wishes are of no consequence. Luxury and necessaries likewise in different ranks of life, have very different significations; nor do the sick of young children, such as those proposed to be Inoculated, require any expensive food; their diet in fevers, and in health is simple and not costly.

The parents cannot both be employed abroad in labour, if they have any young children; the mother must remain at home to nurse, and to cook victuals: neither is it probable that they would be destitute of necessaries and food, though once in a child's life-time the mother gives it constant attendance during the illness of Small-pox. After one week, or at most a fortnight, all danger from Inoculated Small-pox will be over. If this argument was of any real force, "poor women, and middling trades people's wives" who annually bring forth children, and are usually confined to bed,

bed, or at leaſt prevented from doing any laborious work for three weeks or a month ſhould all be ſtarved it would fruſtrate the firſt law of nature, and a principal intention of ſociety. I ſhould not hereafter be ſurprized to ſee ſome medical accoucheur of our lying-in hoſpitals, apply to the legiſlature, and charitable contributions of the affluent and humane, to enlarge ſuch buildings, and gravely to aſſert that all the wives of the laborious and middling trades people will run imminent riſk of famine, ſhould they lie in at their own houſes. When two or three children of a family are Inoculated at one time, all danger and expence will be over in two or three weeks; but in the natural Small-pox the family generally fall ill alternately, and if numerous, linger ſome months in affliction: here the apprehenſions of ſtarving are much more ſerious and better founded.

"Medicines and diet ordered by the "phyſicians would not be regularly complied "with: the air in their houſes is impure: "they have neither areas, gardens, nor carriages for the convenience of ventilation, "and taking the air."

VERY

VERY few of the poor can afford to conſult phyſicians, thoſe only excepted, whom publick Diſpenſaries, or private humanity may ſend to their aid. A phyſician's fees, unleſs they attended as Dr. Sims and Watkinſon generouſly propoſe, gratis, would make a compleat famine in a poor man's houſe for ſeveral months. Great delicacies, and a heap of medicines are very ſeldom neceſſary in Inoculated Small-pox. In Circaſſia the mothers are the Inoculators and phyſicians to their families.

WITH reſpect to the impurity of the air in their houſes, and their being deſtitute of gardens and open areas, ſo are ſeveral hoſpitals in this city; and I apprehend that the poor in ſickneſs would prefer their own dirty houſes, unleſs the diſeaſe ſhould happen to be lingering and protracted to a great length of time, or in ſudden accidents which require expert ſurgical aſſiſtance. The modern public Diſpenſaries which humanely ſupply the poor with medicines and advice, and when neceſſary, attendance at their own habitations are much more cordially reſorted to, than large hoſpitals. Poor perſons may not poſſeſs the means of purchaſing all the neceſſaries and delicacies ſuited to their weakly

weak and ſick appetites, yet they will be more contented to remain in their domeſtic cells with their families and friends, than to be placed under the care of old callous nurſes, expoſed in the open wards of an hoſpital, diſguſted often with offenſive ſights, and perhaps loathſome diſeaſes, and diſturbed by the groans of twenty other ſick in the ſame apartment. If Inoculation is to be witheld in London from the poor until they get "gardens, and areas to their houſes, and *coaches* "to take the air", they may wait to the day of judgement.

CUSTOM has powerful effects both in air, food, and manner of life; when perſons are advanced a ſhort way in years. At all events bad impure air will be more hurtful in natural and malignant Small-pox. The impurity of London air is alſo equally ſtrong through infancy; particularly until children reach ſeven years of age. Some thouſands before this period are annually poiſoned by the London atmoſphere, who would have ſurvived, had they been nurſed in the country with equal tenderneſs and attention. London children after arriving at that ſtage are tolerably ſeaſoned and habituated to their

native element. This is obvious by conſulting all the following tables of comparative mortality at different ages, and the decreaſe of life in city, town and country.

" SAILORS and ſea-faring people, many of " whoſe lodgings are miſerable, in the little " houſes bordering on the river, would be " liable to catch the diſtemper, and either to " fall ſick there without friends or aſſiſtants, " or perhaps being infected on ſhore, to car- " ry it to ſea in their contaminated cloathes; " and afterwards falling ſick without care " or attendance, might ſpread the diſeaſe in " foreign climates."

SAILORS are not the pooreſt claſs of people; their owners and captains will always be ready to ſupply them with money in this ſhort ſickneſs, and to provide them with nurſes and medical advice: beſides their lodgings on the ſide of the river would have one excellent advantage in being airy, and conſtantly ventilated by the tide. As to the falling ſick afterwards at ſea, the danger is rather imaginary; I know of no inſtance, (and I have read not a little upon that ſubject) ſince the general introduction of Inoculation into this country, where either a britiſh army, or grand fleet ſuffered any conſiderable mortality

mortality by Small-pox, although that diſeaſe has broke out in a virulent degree, amongſt a ſmall number in camps, and on board ſhips of war.

PRINGLE and Lind, two ſtandard medical authors upon army and navy diſeaſes, never mention Small-pox as one of the principal epidemic cauſes of mortality; and we may preſume it could not have been kept a profound ſecret from gentlemen of their knowledge and penetration. Lind gives a catalogue of diſeaſes, (not deaths,) in the naval hoſpital at Portſmouth, during two years; out of five thouſand, ſeven hundred and forty-three ſick ſeamen, only fifty-three are ſet down as infected with Small-pox. To ſome of the North American troops, in which country great prejudices ſtill prevail againſt Inoculation, and until lately the contagion was guarded againſt as a plague; this diſeaſe has during war, proved more fatal. It is another extraordinary argument to expreſs ſuch fears about ſailors carrying the diſeaſe to foreign climates: pray what kingdom or climate is free from variolous contagion? The Baron is under great anxiety leaſt a ſailor, or a merchant veſſel ſhould tranſport, and ſpread the diſeaſe in foreign climates; but in London,

don, where twelve or fifteen thouſand have annually been ill of the natural infection, he talks of the public danger as great and inevitable ſhould the poor be Inoculated at their own houſes.

" COUNTRY people coming to town for " markets, viſits, or pleaſure, would all be " ſubject to the ſame danger: perſons co- " ming from the ſick to the general Diſpen- " ſary for medicines or advice, by intermix- " ing in the ſtreets, the public danger from " their infected apparel would be great and in- " evitable: the whole neighbourhood would " be expoſed and in imminent danger, by hav- " ing the diſeaſe brought to their doors".

COUNTRY people coming to London will undoubtedly be more expoſed to contagion; but even in country villages, I imagine that very few are grown up to the age of twenty, who either have not had the Small-pox, or have not been ſeveral times expoſed within the ſphere of variolous effluvia. Again, if Inoculation was general in the early parts of life, all danger of ſpreading the diſeaſe to this deſcription of perſons, and to every other denomination arrived at maturity, would ſubſide: it is becauſe Inoculation is yet partial that the public ſafety is in danger.

If there is any meaning in Baron Dimſdale's terrible apprehenſions, "that the publick danger would be great and inevitable," &c. it implies that by general Inoculation at private houſes, London would be in imminent danger of being ravaged and depopulated as by a true peſtilence, in which one, ſometimes two thouſand have periſhed in a ſingle day: the interpretation may admit of a milder conſtruction, but yet ſomething analogous, and poſſibly inferior in virulence. This alarm I believe is advanced without mature conſideration. I build my opinion upon the two following reaſons: Small-pox in the courſe of the laſt hundred years, has deſtroyed at a medium in London, about two thouſand annually; conſequently at leaſt ſix times two or twelve thouſand (or probably more) were every year afflicted with the natural diſeaſe, and a ſmall number comparatively remained behind untouched; many of the new ſettlers muſt alſo have paſſed over this danger before their arrival in the capital: my ſecond reaſon is, that in the ſpace of one hundred and fifty years, in all which time London has never been one year exempt, from Small-pox; the annual deaths by this diſeaſe have not amounted to four

thouſand,

thouſand, although during ſixty years of this time Inoculation has been known.

Mr. Condamine and other writers remark, that at Rome, in the year 1754, a highly mortal and malignant Small-pox raged, and that four thouſand died of the diſeaſe: 1 out of 3 are ſaid to have been the victims of this malign Small-pox, and of courſe about twelve thouſand underwent the diſeaſe. The total annual deaths at Rome then, and for many years after ſtand at five, ſix, and ſeven thouſand: (Mr. Condamine has underrated the burials.) In London it has never been ſo fatal in any one year. At the Cape of Good Hope, in Brazil, Mexico, Peru, Paraguay, and in a few diſtricts of the northern parts of America, Small-pox has tyrannized with the virulence of a true plague, becauſe none of the inhabitants were ſeaſoned, or had paſſed through that diſeaſe. In London and other great cities of Europe, the caſe is totally different.

" The goſſiping diſpoſition of the poor " will ſpread it further, and after the ſick " recover ſallying forth in their infected " cloathes is certain to add to the miſchief: " the children who are able to run about will " intermix in the ſtreets immediately upon

" their

" their recovery with their play-fellows: the
" ſucceſs therefore derived from general Ino-
" culation would be beneficial to a *few* only,
" but involve a great number of others in
" danger which they would otherwiſe be leſs
" expoſed to."

Upon the goſſiping viſitors of rich and poor houſes, I ſhall preſently ſay a few words. Dr. Watkinſon and Dr. Sims, I apprehend intended that general Inoculation ſhould take place a ſhort time before children begin to cut teeth, provided they are healthy and ſtrong; or immediately after cutting the firſt ſet, between two and four, and at the utmoſt five years of age. The younger claſs of theſe perſons will not be liable to ſpread the diſeaſe in London ſtreets amongſt their play-fellows. Children carried to the Diſpenſary to be Inoculated, could not poſſibly convey the diſtemper until after the eruption, which will be from nine to eleven or twelve days after the infection is engrafted; beſides, the children recovering from natural Small-pox, ſally forth, and intermix with their play-fellows, and diſperſe the infection in all degrees of virulence. That *general* Inoculation ſhould be beneficial to a *few* only, and involve a great number of others in danger,

to

to which they would otherwiſe be leſs expoſed is to me a paradox. What claſs or proportion of the inhabitants of a kingdom would be involved in danger, if Inoculation was general in the early parts of life? In London where we are conſtantly enveloped in variolous contagion, ſuch arguments are futile and abſurd: In great cities no perſons can reaſonably flatter themſelves with hopes of eſcaping the diſeaſe: the voracious foe inceſſantly keeps poſſeſſion, and ſooner or later is ſure to prowl through every ſtreet, lane and alley.

Baron Dimſdale next "addreſſes himſelf "to the legiſlature, and to the affluent and "charitable to enlarge the Small-pox hoſpi-"tal." This is the publick Aſylum which he aſſigns to the poor and middling trades people to ſecure them from the deplorable deſolation made by Small-pox. To me the remedy appears extremely reprehenſible: it is a paltry temporizing palliative totally inadequate to the magnitude of the evil; or if the Baron will indulge me to uſe a few of his own ſofteſt and emphatical phraſes, "it is "raſh and inconſiderate, it would be beneficial

"to

" to a *few* only, and involve a great number " of others in danger."

PARIS has great reaſon to curſe its enormous hoſpital, the Hotel Dieu, that ſeminary of corruption and diſeaſe. Another unanſwerable objection to a variolous hoſpital is, that under ſeven years of age no children are admitted, before which period Small-pox will have made its principal depredations amongſt the native progeny of London. Should infants at the breaſt, or under three years old be admitted, the mothers or nurſes muſt alſo be taken in; theyoung families at home would be then deſerted during three weeks or a month, and the expences of the hoſpital multiplied. Very few mothers would give their conſent to entruſt their young children to the care of ſtrange nurſes, at leaſt without being permitted to viſit them in ſickneſs, and by this means the diſeaſe might be conveyed in their infected apparel to paſſengers in the ſtreets, to goſſiping neighbours, &c. nor would one fourth of the laborious inhabitants, and middling trades-people, ſubmit to have their children crowded into an Inoculating Hoſpital, to be buried them in a hot bed of variolous infection and diſeaſed exhalations.

"LANGE hoſpitals will not be required in "country towns: it will *be neceſſary only* to "obtain the unanimous conſent of all the "inhabitants of a town, pariſh, or diſtrict, "to be Inoculated at one and the ſame time; "for if ſome only are Inoculated, and others "excluded, the diſeaſe will ſpread through the vicinage, and be fatal to many."

THIS *only* ſeems to ſignify, that it is an extremely eaſy matter in country towns, or large diſtricts of open country, to obtain the unanimous conſent of all the inhabitants to be Inoculated at one and the ſame point of time. A conſiderable number poſſibly would permit the infection to be conveyed to their children; many grown up perſons who had hitherto eſcaped, would fly away; others from various ſcruples and prejudices would refuſe their aſſent; and for my own part, ſo far from thinking the propoſal would readily and unanimouſly, without many "veto's," be complied with at one and the ſame time, that I ſhould expect with as much facility, by turning a preaching miſſionary, to convert the nation to one religion. Baron DIMSDALE boaſts of his having ſucceſsfully Inoculated two towns in the neighbourhood of London, Hertford and Ware, but this is a reproach to

his

own pretended humanity, and a flat contradiction to his ſyſtem: for what could prevent the infection from being ſpread amongſt the adjacent villages, and to be diſperſed by the numerous daily paſſengers, ſtage coaches and travellers through London, and every country town of England.

"THE wealthy and rich availing themſelves of *timely Inoculation ſecure their families*; but the loſs falls chiefly on the offspring of the inferior trades-people, and the labouring poor: to encourage partial Inoculation amongſt *them*, would be only ſpreading the diſeaſe and increaſing the evil."

IN the name of common ſenſe and humanity, why are not the *poor to ſecure their families by timely Inoculation* equally with the rich? why is Baron Dimſdale ſo active in Inoculating the latter in London, in rendering Inoculation *partial* and ſpreading the evil. Are there no goſſipers, viſitors, doctors and attendants to diſperſe infection from the houſes of rich perſons? If he is ſerious in conſidering *partial* Inoculation as injurious to the community, it is highly criminal in him to be one of the moſt active inſtruments in their deſtruction. Partial Inoculation he exclaims

exclaims is raſh, inconſiderate, it endangers the publick ſafety: good God, that men can be ſo blind and partial to their own actions! Invective and ill humour are quite foreign to my diſpoſition, but I will tarry ſo long in this diſagreeable and thorny path to obſerve, that Baron Dimſdale's fiery zeal in condemning Inoculation in London, reminds me of a hacknied ſtory related of a clergyman, who in the midſt of a ſermon, and with uplifted hands, was pouring forth a torrent of anathemas againſt gaming; when unluckily a pack of cards dropt out of the ſleeve of his caſſock, and unmaſked the hypocrite.

WHILST the opulent claſſes in London are permitted to practiſe Inoculation, others will imitate them. It is natural for every parent, rich or poor, it is their duty to aim at preſerving the lives, and even the beauty of their children. I can ſee no reaſon why poor perſons or middling trades-people ſhould hazard the lives of a young family, becauſe his neighbour has ſcruples againſt Inoculation, and obſtinately perſiſts to reject that certain means of ſecurity. So long as Inoculation is confined to a few, ſo muſt its benefits: we mean it to be univerſal. The Baron in this

laſt paragraph, without being ſenſible of the contradiction, is evidently pleading the cauſe of general Inoculation.

WHERE the inhabitants of country towns are all Inoculated at one and the ſame time, unqueſtionably the neighbourhood and travellers will be leſs expoſed to danger, and the diſeaſe may not return back again to that vicinage until ſeveral years have elapſed: but in London we are never without an immenſe magazine of poiſon from natural and Inoculated Small-pox, a very ſmall ſpark of which is ſufficient to kindle up the diſeaſe, and to multiply itſelf in a favourable diſpoſition of the air. The caſe mentioned by Baron Dimſdale, but copied from Dr. Mead, is one of many other proofs to this effect, and is as follows.

"IN 1718, two or three children had "caught the infection of Small-pox in the "Eaſt Indies, and on the voyage were taken "ill: the diſeaſe was violent: the linen "which they wore in ſickneſs was put "into a box unwaſhed, and landed at the "Cape of Good Hope, where it was ſent "on ſhore to be waſhed by the natives. On "opening the box, the infection was com-"municated:

"municated: Small-pox broke out, ſpread-
"ing into the country, and carried off vaſt
"numbers of the inhabitants, ſo that the
"country was almoſt depopulated."

It was mentioned in a former part of this work, that a ſingle negro ſlave firſt carried variolous infection amongſt the Mexicans, who had until then been ſtrangers to the diſeaſe, and by which incredible multitudes of the inhabitants were exterminated. In India, I ſaid, upon Mr. Holwell's authority, that the matter of Inoculation has been preſerved ſeven years entangled in cotton, and cloſe ſtopped up from the external air; after that interval of time it will convey the infection by the artificial mode. The maxim of Celſus, that medicine is a circle, often ſtrikes me very forcibly. To take a comprehenſive ſurvey of this ſubject, we ſhould examine the nature of different ſpecific contagions, of plague, jail infection, and of variolous poiſon; the length of time they can be preſerved in woollen or porous materials, and the remote diſtance to which they have ſometimes in this way been tranſported.

Take what precautions we can in London to prevent communication of variolous contagion, it will be impoſſible and nugatory, where twelve or fifteen thouſand are annually

ill

ill of natural Small-pox, which has been the caſe one hundred years without interruption; adding to them their families, friends and viſitors, amounting in all to treble or quadruple the number of ſick, and to whoſe cloathes or perſons infection may adhere, what fears ſhould London inhabitants have of general Inoculation? To prevent variolous contagion in Dr. Dimſdale's plan from being tranſported through London, the inhabitants ſhould have their doors baricadoed, old cloathes men, retailers of rags, and thoſe who hawk about old woollen apparel through the ſtreets, ſhould all be hanged, or ſent to the gallies; Inoculators and doctors ſhould ſuffer the ſame puniſhment, or be avoided as a peſtilence, and, like Cain, ſome diſtinguiſhing mark ſhould be ſet upon them; ſtage coaches and poſt-chaiſes filled with paſſengers that go out and return every day, from all the parts of the kingdom, ſhould be put a ſtop to, none ſhould enter, nor go out of town without bills of health; goods and merchandize ſhould all be ſubjected to inſpecting officers, and detained, and guards ſhould be poſted at every avenue. This would be treating Small-pox ſomewhat ſimilar to plague, but it would eſtabliſh a medical ty-

ranny

many more rigorous and horrible than the religious inquiſition of Spain; every office of ſociety would meet with intolerable interruption, the London inhabitants would drag through a miſerable life of ſlavery, under everlaſting terrour and quarantine. At preſent ten thouſand avenues are daily left open for the mercileſs invader, and I can ſee no certain ſecurity or retreat in this city, but to render ourſelves invulnerable by early, and univerſal Inoculation.

"Before inſtitutions of this kind (the In-"oculating Diſpenſary) are tolerated, the le-"giſlature ought firſt to be conſulted."

No legiſlature that is not arbitrary and unjuſt, can in this caſe preſume to make one rule for themſelves, and another for the poor and middling trade-people; at leaſt without a flagrant encroachment on the rights of mankind, they cannot interfere to prevent them from Inoculating their children, if it is permitted to the higher and opulent ranks in London.

I CAN perceive but three or four ways, in which the legiſlature could poſſibly intermeddle in laying any reſtraint, or enacting regulations reſpecting Inoculation. One way is

is either to prohibit the practiſe in London amongſt the rich and poor, and to tolerate it in the country alone, or in Small-pox lazarettos built for that uſe at ſome diſtance from the capital. In this mode, the opulent claſs retiring to their country houſes, would diſperſe infection according to Baron Dimſdale's ſyſtem over the kingdom, and in what inconſiderable degree Small-pox lazarettos could ſecure the laborious inhabitants of London from danger, I ſhall ſoon demonſtrate. Another way, in which the legiſlature might interpoſe their authority is, by ordaining that general Inoculation in London ſhould only be performed in certain ſeaſons of the year, in imitation of the Bramins in India during two or three months, that afterwards all afflicted with this diſeaſe, rich and poor, ſhould be removed and immured as in caſes of plague, their infected goods and apparel waſhed, and purified by fire and ſmoak. Baniſhing Inoculation alone from the capital, or from the kingdom, would not baniſh Small-pox; we have many centuries uninterrupted experience of the contrary. The legiſlature might alſo enact a law, to oblige ſeparate

 pariſhes

riſhes to defray the expences of Inoculating the indigent poor at their own houſes, and in country towns, and open diſtricts it might be practiſed every two or three years, or even ſooner, ſhould natural ſmall-pox break out in the neighbourhood. Of all theſe different modes, the practice of the Bramins, and ſupporting the poor during Inoculation, are alone entitled to any ſerious conſideration.

HAVING now replied to all Baron Dimſdale's objections, I have yet in reſerve, facts and mathematical evidence, which I conceive muſt alone overſet the whole ſuperſtructure of the Baron's argumentative oppoſition, to general Inoculation at the private dwellings of the poor and middling trades-people. I deny that an Inoculating Hoſpital is the effectual means to leſſen the publick danger and mortality in London, from natural ſmall-pox. The reader will be ſo indulgent to favour me here with his particular attention. I ſhall take up the matter in the moſt favourable point of view for Baron Dimſdale. Suppoſe therefore that by the bounty of the legiſlature and private contributions, an Inoculating Hoſpital large, and endowed with every neceſſary, is erected in this city; that Baron Dimſdale is enthroned ſupreme ſuperinten-

dant

dant and dictator, that upon his ſingle authority, all the poor and middling tradespeople have refrained from Inoculating their families until they are *five* years old, which as many as ſurvive ſhall be taken into this lazaretto: how many lives now from five to twenty years of age, could in this way be annually ſaved to the metropolis? This Baron Dimſdale muſt allow to be liberal; it is giving in two important additional years of infancy from five to ſeven, and ſtating the argument as ſtrong as poſſible againſt myſelf.

Please to turn to the following chapter towards the middle, and look out a ſmall bill of comparative mortality, at all ages in London during fifteen years, by Dr. Short: annexed to which, and to the ſame effect, is another of thirty years by Birch. The annual medium too of deaths in Short's bill were greater than at preſent, amounting in all to twenty-ſeven thouſand; out of this number more than twelve thouſand died annually under five years of age, but from five to twenty in the ſame time, not nineteen hundred, including every death and mortal diſeaſe. In this caſe, following even Baron Dimſdale's overcharged calculation, if one *eighth* died of

Small-pox out of nineteen hundred, then in London from five to twenty years of age there would die annually, even of the natural Small-pox, but about two hundred and forty.

But this ſmall decreaſe is overrated, for of late years the annual deaths in London are, (it is not neceſſary to be exact) we ſhall ſay twenty-two thouſand: from five to twenty, the annual deaths about 14 or 15 hundred: one *eighth* deducted for Small-pox, makes two hundred not to die in London, in this long interval of life of the natural diſeaſe. One *eighth* I remarked was too large a proportion for Small-pox; it was formed upon four years only of the bills, ſelected by Baron Dimſdale; one tenth or twelfth was the average during forty years. This therefore ſtill detracts from the inconſiderable number of Small-pox deaths in this ſtage of life, from *five* to *twenty*. That the Inoculating Hoſpital had no effect whatever in diminiſhing the proportion of deaths in this fifteen years period of Short's bill is evident, becauſe that hoſpital was not erected until 1746.

I do not wiſh to ſubſtitute the leaſt conjecture in this propoſition; nor do I venture poſitively to aſſert, that Small-pox will bear an exact ratio of one eighth or twelfth to all

other

other diſeaſes in the fifteen years, from five to twenty: ſure I am, that no perſon in his ſenſes will pretend to alledge, that all who die in London in this interval of life, periſh by Small pox alone; and were we to admit ſuch a ridiculous ſuppoſition, their intire numbers are greatly inferior to variolous mortality. In fact, without adding a large portion of Small-pox deaths, we cannot poſſibly by all the other diſeaſes commonly incident to young children, account for the mortality under five years of age in London.

PERSONS born in London, who have continued from birth to twenty, to reſiſt the impreſſions of variolous infection, though encircled daily in this poiſon, will not in all probability at that age enter into an Inoculating Hoſpital: their numbers as I have already repreſented cannot be very conſiderable. Thoſe more ſtricken in years, and the aged, who have alſo eſcaped, will truſt as uſual to providence. Again, all that die under ſeven years of age, are ſhut out of the pale of the Inoculating Hoſpital; they are interdicted by Baron Dimſdale, from being Inoculated at their own houſes, unleſs their families are rich and wealthy; unleſs they have gardens, areas, coaches, and a variety of other luxuries; they are expoſed to the ravenous fury

of

of natural Small-pox, and thouſands of them doomed to certain deſtruction.

None, ſays Baron Dimſdale, ſhould be Inoculated in London and other great cities, at the private houſes of the poor, laborious and middling trades-people; as many of their children as have waded through danger ſeven years are to be received into an Inoculating Hoſpital: in country towns and open diſtricts too, all muſt conſent at one and the ſame time to receive the infection, otherwiſe it will be ſpread through the neighbourhood, do infinite miſchief, and ſhould not be attempted. So that upon the whole, as the inhabitants of cities and towns, are in proportion to thoſe in the country, as one to three and an half, and Inoculation in both clogged with ſo many difficulties, interdictions and impracticabilities, that by Inoculating even country villages, there is imminent riſk of ſpreading the diſeaſe, and propagating the natural infection in the neighbourhood, that at private houſes in cities, it is tolerated only to a handful of the rich and affluent; I appeal to the underſtanding of ſenſible and impartial men, whether Inoculation is not effectually reſtricted and fettered from operating as a great national benefit or diminution of mortality.

DAVENANT's eſtimation, rated the houſes in England and Wales at one million, three hundred thouſand, near the beginning of the preſent century: the cottages then were five hundred thouſand: now they are both greatly decreaſed in number. We have probably at this time, a more plentiful proportion of rich and opulent inhabitants in this iſland, than any other kingdom of Europe. In 1777, the houſes that paid for ſeven windows, and conſequently the window tax, are rated by Dr. Price at one fourth of the others. Even in this country we muſt ſee, that the laborious and middling trades-people, make up the great hive of the nation. All their families are to be incarcerated in London during Inoculation, by Baron Dimſdale's orders, or to be debarred its advantages. If poverty is made a mighty objection againſt Inoculation at private houſes, it will be ten times ſtronger at Paris, where one third die annually in their publick hoſpitals: it would damn not only Inoculation, but alſo propagation throughout all the lower and laborious ranks in Scotland and Ireland, numbers of whoſe miſerable peaſantry are condemned to ſubſiſt during a

great

great part of the year, principally upon oatmeal gruel, or potatoes and ſalt.

To a ſmall number of indigent perſons and their children, exceeding ſeven years of age; to a few ſtrangers deſtitute of money and friends, who may happen to be ſeized in London with the natural Small-pox, a variolous hoſpital will during their ſickneſs, prove a uſeful Aſylum. Of thoſe likewiſe who are Inoculated in that receptacle, the blanks and prizes will be in the ordinary proportion; but cannot as a national ſaving from five, and much leſs from ſeven to twenty, amount to above one, or at the utmoſt, two hundred annually. What proportion of the new annual ſettlers have had Small-pox, and how many are ſo poor as to make it neceſſary for them to enter into an hoſpital, are equally uncertain. If the whole had come to London without previouſly undergoing the Small-pox, it would not for that reaſon be incumbent on the London inhabitants, to neglect the ſafety of their own families, leaſt the new ſettlers might catch the diſeaſe from Inoculated Infection. Dr. Price thinks, that a great number of the new emigrants are cut off by the foul air,

vices,

vices, and debaucheries of London, he ſays nothing of Small-pox: I am induced by various conſiderations to believe, that whatever ſhare of Small-pox mortality takes place in London amongſt perſons turned of twenty years of age, is almoſt ſolely confined to the new annual ſettlers or recruits, the majority of whom arrive in the capital from twenty to forty years of age.

If London, by births and recruits, is ſuppoſed to require an annual ſupply of twenty-nine thouſand to repair the loſs by deaths, and if all thoſe were inoculated each year, according to the old calculation of 1 to 100, then 290 would be the decreaſe by Small-pox; but by the more enlarged and modern calculation of one to five hundred, out of twenty-nine thouſand inoculated, fifty-eight deaths only would enſue. Extend this calculation to Great Britain and Ireland; by Davenant's eſtimate, the annual births amongſt 9 millions of inhabitants in theſe two iſlands will amount to about three hundred thouſand: a few thouſands more is immaterial for our groſs valuation: if all theſe three hundred thouſand were to live to be inoculated, and one out of five hundred die, the nation, inſtead of thirty thouſand Small pox deaths annually, in this and her ſiſter iſland, would loſe but

ſix hundred: And expanding the ſame calculation to all Europe, the blanks would amount to about eight thouſand; conſequently three hundred and ninety-two thouſand lives would be annually preſerved.

Should Inoculation take place univerſally, amongſt the inhabitants of Great Britain and Ireland in the early parts of life, that is under five years of age, and all beyond that ſtage have undergone the diſeaſe by the ſame precautions, in this predicament the infection, however virulent, could not extend itſelf in the natural way, but to a diminutive number of the community; for out of nine millions of inhabitants, thoſe under five years of age will not exceed fourteen hundred thouſand, and probably not one half of theſe are, in one year, fit ſubjects for the operation.

Upon the firſt introduction of Inoculation, phyſicians, divines, and innumerable other writers cried out, that the infection would be ſpread, and the community ſuffer a greater loſs; but after ſixty years experience, we ſhould expect thoſe arguments, as well as the writers, had all died away, and that at this day, the ſame ſtale dregs of ignorance and obſtinacy would not be again retailed.

To

To traduce general Inoculation, to increaſe the prejudices of the lower orders, and bulk of the community, againſt the practice, is in my idea neither wiſe, politic nor humane. The general notion of all illiterate perſons is a kind of irreſiſtible fatality, and they are too apt, in diſeaſes, to commit all to God, as the ſtupid Turks do the plague, without tak- " ing timely precautions to ſecure their fami- " lies." Poſſibly many years muſt yet elapſe, before the whole kingdom will be awakened to a juſt ſenſe of its intereſt and ſafety; before cuſtom and prejudice are done away, and ignorance enlightened.

EVERY life ſaved by this practice is ſo much ſolid treaſure and ſtrength added to the nation. There is no diſeaſe where we have it ſo much in our power and command to leſſen mortality, as in the Small-pox by Inoculation. It is a bridge, furniſhed by Providence, to paſs over a yawning gulf, a raging whirl-pool, in which millions of the human ſpecies have been ſhipwrecked. Baron Dimſdale's humanity is ſhocked at permitting liberty to travellers, of every rank and deſcription, to eſcape by this ſecure rout. His tour to Ruſſia may have taught the Baron ſtrange notions of humanity, and reve-

rence for rich perſons; the commonalty, and middling trades-people in this metropolis will not probably thank this Imperial phyſician for ſuch exotic ſentiments. If Baron Dimſdale is candid and ingenuous, he ſhould deſiſt from Inoculation in London, and in villages contiguous to the capital; he ſhould return all his fees to ſome charity, as a ſmall expiation for the public injury he muſt already, according to his profeſſed creed, have committed in the exerciſe of that vocation, and as an unequivocal proof of his ſincerity, and contrition for wilfully beſmearing his hands with human ſacrifices. His arguments, if they were of any real validity, would ſeal the final doom of Inoculation in every caſe and ſituation, whether in city, town or country.

When men's actions or writings ſeem fairly and honeſtly directed for the public good, and without any ſiniſter bias, I can pardon their groſſeſt errors, or animadvert upon them with mild cenſure, and without diſpleaſure. In this tender and indulgent light, I can ſmile at the propoſal of an old pragmatical Greek philoſopher, who, obſerving many diſeaſes follow from changes in the temperature of the air, exhorted mankind

kind to live in dens and caverns under ground, where the ſun beams and changes of the air could not pierce: in one of which gloomy abodes he is ſaid to have lived many years: had he propoſed to bury the poor, laborious, and middling claſſes in ſuch ſubterraneous cells for the benefit of their conſtitutions, and have left the rich and himſelf above ground, to baſk in ſnug houſes, I ſhould have ſpurned, if not with indignation, at leaſt with contempt at the philoſophy and philoſopher.

BARON Dimſdale hints "that an action "of damages would lay againſt a perſon who, "by inoculating *horned cattle* for a conta-"gious diſeaſe, would ſpread the infection "in the neighbourhood." The plain interpretation of this poliſhed remark is to recommend Dr. Watkinſon and Dr. Sims as objects deſerving of proſecution, and as criminals who ſhould be puniſhed by the laws. In this enlightened nation, I am not under the leaſt apprehenſion for their fate, and let Baron Dimſdale beware, leaſt another perſon ſhould in this ordeal be convicted as the principal culprit. I will alſo ſuggeſt to the Baron this friendly admonition; that before he conſigns over theſe two phyſicians to dungeons and gibbets, to read the ſtory of the celebrated

brated Galileo, who, as all men of literature know, was impriſoned by the ignorant monks of the inquiſition, and threatened to be burnt alive, for having aſſerted the rotatory motion of the earth. It is very ſingular, that Baron Dimſdale makes uſe of many of the ſame phraſes formerly employed by Wagſtaff, who wrote ſtrenuouſly againſt Inoculation upon its firſt introduction, and with libellous invectives inveighed againſt its patrons. Wagſtaff called the Inoculators public murderers, and with outrageous acrimony invoked the legiſlature to puniſh them.

To the reader and to the publick I humbly ſubmit the final deciſion of this important controverſy, in which the intereſt and ſecurity of mankind are ſo materially involved: a ſtate of indifference and neutrality is incompatible with ſound policy and humanity. I wiſh my arguments to be deliberately weighed, and after mature examination and ſevere ſcrutiny, to be received or rejected, as they are built upon facts, ſupported by ſpecious or ſolid reaſoning, and as they appear to conduce to the ſafety and benefit of the nation. I flatter myſelf with having laid thoſe ſpectres which Baron Dimſdale conjured up, to affright the metropolis, and the nation from general Inoculation. No man has ſo often

thrown

thrown down the gauntlet in that cauſe and braved defiance, as the Baron: he is in truth (what a witty author ſaid of the metaphyſicians) a furious gladiator, that fights hoodwinked, and with a bandage bound faſt over his eyes.

A QUESTION of momentous importance with which I ſhall cloſe my obſervations upon this ſubject, ſtarts to view. Would it not be poſſible and adviſeable to eradicate the Small-pox from Europe, to baniſh it to its original birth-place in either Arabia or India, and to ſet up barriers againſt its return and communication, as in caſes of plague? Should the contagion be once exterminated, and no remains of the ſpecific "nidus" left behind, there certainly appears no power in the climate, ſoil or air of Europe, again to regenerate ſuch a diſeaſe. To make this propoſition clear and intelligible, I ſhould treat of ſpecific contagions; but Medical and profeſſional men are no doubt ſufficiently well informed on that head.

IF Small-pox had ſeized upon a perſon more than *once* in life, and the body afterwards, as in caſes of other infectious fevers and of plague, had ſtill been ſuſceptible of receiving the variolous infection; either the human ſpecies would have preſented a frightful

ful ſpectacle of corroded ſcars, and mangled deformity; or what is more probable, the greateſt part would, long before this time, have periſhed by Small-pox; but to prevent ſuch deplorable conſequences, mankind would have been under the neceſſity to unite with one general conſent, to oppoſe and chain down this inexorable foe.

THERE is no proſpect of our ever getting rid of variolous poiſon, unleſs ſome general, or rather univerſal league of this nature ſhould be entered into. To ſave four hundred thouſand lives annually ſlain in the European region alone by a ſingle enemy, is an object which merits the attention of all the different legiſlators, and philoſophers of Europe. One kingdom ſingly could not, conſiſtent with propriety, and for obvious reaſons attempt ſuch a critical experiment. Either Inoculation ſhould be univerſal in the early parts of life, or (if practicable) the diſeaſe, like the plague, plucked up by the roots. The laſt I throw out merely as a looſe idea, and a ſubject not unworthy of future inveſtigation. I find that I have inſenſibly run to a much greater length than at firſt ſetting out I either expected or wiſhed.

CHAP.

CHAP. II.

Bills of Mortality: when eſtabliſhed in Europe: *their Defects: of the Mortality at different Ages in City, Town, and Country: of the Comparative Numbers of the two Sexes, and their reſpective Mortality: of the Numbers alive at different Ages in any Nation; and the Proportion between City, Town, and Country Inhabitants: various Tables in Illuſtration of the Comparative Mortality, and of the Decreaſe of Mankind at every Age in City and Country: of Great Cities, and the Principal Cauſes of Depopulation in them; exemplified by* London.

THE births, genealogies, and deaths of Adam's deſcendants, down to Noah, and the Patriarchs, are recorded in Scripture: ſome chapters of Geneſis are plain regiſters of births and mortality. The Iſraelites were at diſtant intervals muſtered and numbered by Moſes and his ſucceſſors; and in a few uncommon peſtilences the devaſtation is aſcertained in the Jewiſh hiſtory. The deſcent and pedigree of Kings and other great men, have alſo been kept in moſt nations

who had made any progreſs in civilization; but general annual regiſters of births, diſeaſes and deaths, are modern eſtabliſhments, and were unknown to the ancients.

On the continent regiſters were inſtituted, fifty or a hundred years before their introduction into England: bills of weddings, chriſtenings and burials were kept in the churches of ſeveral villages and country pariſhes in this iſland, ſo early as 1538. At firſt they ſeem, both in Germany and in England, to have been deſigned to prove the birth, death and deſcent of private perſons, and the right of inheritance in property or lands. About 1603, bills of mortality for London were inſtituted, but the plague was the only diſtemper then taken notice of. 1629, the different diſeaſes and caſualties of thoſe who died, together with the diſtinction of ſexes were added 1728: and not ſooner, the different ages of the dead were ordered to be ſpecified in the London bills. Upon firſt eſtabliſhing the diſtinction of diſeaſes and caſualties in the bills, the primary intention I believe, was to diſcover the numbers deſtroyed by the plague, and to detect concealed murders. At Vienna and Berlin, regiſters are kept ſimilar to thoſe in London: Edinburgh, Norwich, Northampton, and ſome other towns of this iſland, have alſo

copied

copied and imitated ſuch wiſe and uſeful examples.

Publick records of births and mortality are now partly become the rules of political arithmetic; but unfortunately for Politicians and Medical men, they are yet too incorrect and imperfect. Regiſters of diſeaſes and deaths ſhould be entruſted to more ſkilful heads than to a couple of ignorant old women, called in their diſtricts, pariſh ſearchers: at preſent they conſider the "ultimatum" of their commiſſion and duty, is merely to prevent private funerals and concealed murders. The whole buſineſs in London is conducted in the following inaccurate manner. Upon hearing the bell toll, and inſpecting the books kept in the different churches, the ſearchers are appriſed, from whence notice has been ſent of a death, in order that a grave may be opened: the two matrons then ſet out to examine that no violence has been committed upon the dead, of which they are ſworn to make a true declaration, and afterwards negligently enquire from the relations the name of the diſeaſe, adding the age and ſex. Theſe records, together with the chriſtenings, in the latter of which the ſearchers have no concern, are depoſited with the reſpective clerks of each pa-

riſh church, and by them carried once every week to a general hall in the city: on the following day the weekly bill, comprehending all the pariſhes ſo returned is made out, printed and publiſhed.

From bills placed upon a better footing, phyſicians and ſtateſmen might both draw ample ſources of information. If, as Dr. Price, and as Voltaire, and many other writers have obſerved nearly to the ſame effect, every ſeventh year, an account was taken under the direction of government, through every town and pariſh in the kingdom, and conducted upon a large ſcale, the forces, ſtrength, population, increaſe, decreaſe, reſources, trade, and health of the inhabitants might be known. It ſhould comprize a numerical liſt of every rank and order; of the married, unmarried, widows, widowers, ages, ſexes, weddings, chriſtenings, &c. In the medical columns ſhould be given, the ſtate of the weather and ſeaſons in that year, and in the dreary columns of deaths, the ſpecific diſeaſes which deſtroyed life, annexed to each diſeaſe, ſhould be the numbers dying at different ages of that malady. Males grown up to maturity who die, ſhould be diſtinguiſhed either as married, widowers, or batchelors; and females either as married

ried, widows, or virgins. From ſuch an authentic magazine of facts and materials, national health, mortality, the diſeaſes moſt fatal to a nation, their growth or declenſion, the effects of diet, drinks, of medical practice, the ratio of population, and a multitude of other political and medical queſtions ſtill entangled in doubts and intricacy, might be evolved.

A PLAN ſo general, individual induſtry alone however indefatigable, cannot accompliſh without miniſterial power, and aſſiſtance to carry it into execution: the church, or a few uſeleſs ſtate ſinecures, might without any inconvenience ſpare a ſufficient revenue to carry it into effectual practice. In London, and indeed in all the large towns throughout the kingdom, no intermiſſion ſhould take place in the bills, as in the caſe of ſeptennial periodical regiſters: numerous pariſhes, church-yards, and diſſenting religious ſects, hitherto excluded, ſhould be comprehended in the annual bills, both in reſpect to births and burials, and the function of ſearchers committed to medical men with moderate ſalaries. At preſent we have, even in London, but partial and confuſed views of the ſlaughter by diſeaſes. We muſt too frequently diſtruſt the

the report and capacity of the ſearchers in diſcriminating the cauſe of mortality.

The detached obſervations of phyſicians confined perhaps to a ſmall town or pariſh; a little detail of village remarks, afford in many inſtances a foundation too ſlight to erect any general concluſions, or permanent medical principles. To determine upon the reſpective mortality by various diſeaſes, upon the general effects either of diet, drink, modern luxuries, and new manners, we ſhould extend our views far beyond the narrow bounds of a pariſh, or even of a province. Phyſicians have made and publiſhed many poſitive aſſertions, branding cyder as a principal cauſe of engendering ſtone complaints in the cyder counties, but upon a late review, which I ſhall at a proper opportunity introduce, it appears, that in the other counties of England, where this liquor is not drank, ſtone diſeaſes are equally numerous. Some phyſicians have extolled, and others in direct oppoſition to them have condemned almoſt every food, drink and delicacy, that a man puts into his mouth: tea, coffee, wine, ale, and refined ſpices, have all in their turn been anathematized. Very few of theſe propoſitions are founded upon a broad

baſis;

baſis; they do not embrace ſufficiently large groups and claſſes of mankind.

CALCULATIONS of human propagation, exiſtence and mortality, derived from a prodigious maſs of obſervations and regiſters in various parts of Europe, have been publiſhed by ſeveral eminent philoſophers, and mathematicians. The proſpects of life and death are now reduced almoſt to a certainty, and calculated for all ages, with as much exactneſs and probability by the annuitant and inſurance offices, as the chances on dice, or the blanks and prizes in a lottery wheel. Graunt about 1676, firſt wrote a treatiſe on the London bills of mortality, and was followed in the ſame century, by Petty and Davenant. This I apprehend was the epoch of a new ſcience in politicks, philoſophy, and medicine. Graunt had many difficulties to encounter in this unprecedented attempt; and from a ſcantineſs of authentic vouchers, and materials wanders frequently into random gueſſes. The preſent century has produced a number of excellent treatiſes upon this ſubject. The moſt celebrated are Dr. Halley's, De Moivre's Tables, Suſmilch's calculations: Sympſon's ſelect exerciſes, ſome eſſays in the philoſophical tranſactions, abridged, Short's obſervations on the bills of mortality,

tality, Dr. Price's Eſſays, Birch's collection of the London bills to 1759, and laſtly, to the original ſources, the bills of large capitals, and ſmaller towns.

It is neceſſary to premiſe, that the tables of mortality in different countries, and collected at diſtant periods diſagree conſiderably, and of courſe the calculations drawn from ſuch materials, are at variance. We cannot treat the ſubject with that accuracy which its extenſive importance reqnires; but to enumerate all the reaſons for our inability would be too tedious, and even voluminous. For medical purpoſes indeed it is not indiſpenſibly neceſſary to bring the matter to the ſame mathematical nicety, with the inſurance offices for lives and annuities. In the ſubſequent diſquiſition however defective, I ſhould not omit to acknowledge obligations to Dr. Price's excellent treatiſe.

Calculations of the following nature and extent, which meaſure the annual ratio of mortality, in every period of town and country life, enlarge the phyſicians ideas reſpecting diſeaſes and mortality; without them prognoſtics muſt be very imperfect. In the next chapter, an attempt is made to form a groſs eſtimate of the proportional havock by different diſeaſes; theſe intereſting facts will naturally

naturally lead to a variety of reflections upon the probable means of diminiſhing mortality, upon medicine, and medical practice. Phyſical writers have in general neglected, or at moſt, barely ſkimmed the ſurface of theſe ſubjects; the publick regiſters of births, diſeaſes and deaths, are ſhamefully overlooked by all the great modern ſyſtematic authors. They leave us equally ignorant of the actual and comparative force of thoſe fiends, which haunt and ravage the world. In the courſe of many years attendance upon medical lectures, I never once heard the bills of mortality mentioned.

VERY few of the human ſpecies die of old age, or natural decay; by far the greateſt proportion are prematurely cut off by diſeaſes. In London, and all the vaſt capitals of Europe, upon an average, one half of the children born, die under three years of age; at Vienna, by the bills half die under two years old; but in country towns and in villages, the proportion of infant mortality greatly decreaſes. At Mancheſter, a country town of England, half of the children die under five years of age: at Norwich, half die under ſix; and at Northampton, a country town, ſmaller than

either of the two former, half the infants born ſurvive to ten years of age. London therefore will have loſt a number in the intermediate ſpace from three to ten, or will have fewer at that ſtage than Northampton by about ninety, in every thouſand.

ATTEND next to the ſmall proportion of infant mortality in country diſtricts. By Dr. Short's bills, in ſeveral ſmall country villages of England, the major part born live to 25: 27: 33: and even to 40. In many country pariſhes and open diſtricts, half the inhabitants born, live to mature age, to 40 and 46, and to beget families of children: in ſome country diſtricts of Switzerland, ſimilar obſervations have been made Here is an aſtoniſhing diſparity between the duration of town and country life; but particularly, let it be engraved upon the memory, in the early ſtages of infant exiſtence: life then is extremely brittle: infants in cities reſemble tender, delicate plants, excluded from freſh air, or fiſh confined in muddy ſtagnant water; they periſh before acquiring a ſolidity and ſeaſoning to endure the adulterated quality of city atmoſphere.

WHAT

WHAT will be the annual decreaſe, out of any given number, one thouſand, or fifteen hundred, for example: from birth to a hundred years old, in cities and country diſtricts, appears diſtinctly in the ten tables inſerted near the end of this chapter. The mortality amongſt infants in the firſt year after birth, is greateſt of all, and continues during ſeveral ſucceſſive years to diminiſh; upon reaching the third year in great cities, infants are ſomewhat ſeaſoned, and the mortality abates: there is not afterwards out of equal capitals, that prodigious diſproportion of deaths between city, town and country, they approach gradually nearer to a par. From five to twenty, in city, town and country mortality is very ſmall: from twenty up to ſixty deaths again ſwell. After paſſing the meridian, and in the evening of life the ſeaſoned inhabitants of cities ſeem rather to have the advantage of the country in health and longevity. That is to ſay, the numbers alive in the country, at ſixty-five, ſeventy, and eighty years of age, are greater proportionally than in cities; but the latter claſs arrived at thoſe years in London, have ſurer expectations of life. In both the few ſurvivors at ninety years of age, out of every

thouſand, will have loſt almoſt all their fellow travellers in the journey long before reaching that goal. Since the days of Moſes, human exiſtence has been circumſcribed within the ſame narrow bounds. In the London bills of mortality, during a period of thirty years, that is, from 1728 to 1758, the total deaths amount to ſeven hundred and fifty thouſand, three hundred and twenty-two; and of all this number, two hundred and forty-two only reached beyond a hundred years of age; one of whom arrived to the age of one hundred and thirty-eight.

WHEREVER the number of inhabitants in any kingdom, city, or village continues the ſame without increaſe or decreaſe; it is evident that there the annual births and deaths will be equal, and the ſupply proportioned to the waſte. If any town juſt ſupports itſelf by procreation only, as many will die at all ages in the year, as are born in that year. In all the large cities of Europe, in London, Paris, Vienna, Rome, Augſburg, Breſlaw, Dreſden, Berlin, Amſterdam, Edinburgh, Dublin, and in all country towns of conſiderable ſize, the total burials annually exceed the births; but in country pariſhes, ſmall villages, and open diſtricts of country, the annual

annual births exceed the burials: from the latter, a recruit is furniſhed for the conſumption of cities, armies, navies, war, extraordinary epidemical ſickneſs, colonization, and other contingencies: the country ſurplus prevents depopulation. It is calculated, that in London within the laſt one hundred and fifty years, about one million more of the human ſpecies have been waſted beyond what were raiſed by its own original growth and procreation. On the contrary, in the little fertile iſland of Madeira, according to Dr. Heberden, the inhabitants double themſelves within eighty-four years. In North America, if Dr. Franklin's calculations are authentick, the inhabitants in a few of the ſouthern provinces, have doubled themſelves in the ſhort ſpace of fifteen years, and in ſome of the more northern provinces of that continent in twenty-two and twenty-five years.

TAKING the whole aggregate number of inhabitants in different great cities, from birth to one hundred years and upwards, they are computed to die in the following annual proportion to the living. In London, one of 20 $\frac{3}{4}$: Rome 1—23: Vienna 1—19 $\frac{1}{2}$: Berlin 1—26: Amſterdam 1—21 or 22:

Dublin

Dublin 1—22. This is Dr. Price's calculation; but Suſmilch and Dr. Halley, make only 1—24 to 29 to die annually in great cities. In Edinburgh although containing not more than fifty thouſand inhabitants, yet the deaths through the different ſtages of life, agree nearly with London: *ceteris paribus*, the mortality in cities will bear a proportion to their ſize; but the inhabitants of Edinburgh are crowded into a very ſmall ſpace, many families dwell together in the ſame houſe; theſe, with ſome other inconveniences and uncleanlineſs, render it unwholeſome to young infants. In Norwich, which contains about thirty-ſix thouſand inhabitants, the annual average of deaths is 1—24: Northampton 1—26: ſmaller Towns 1—30. In ſeveral provinces and country villages of European kingdoms, the proportion of annual deaths to the living, is eſtimated from 1—32 and 33 to 45. In the iſland of Madeira, to 1—50. Within thoſe different ſhort intervals of time, will have died in the reſpective cities and country places alluded to, a number equal to the total amount of the inhabitants. One out of thirty-two, thirty-three, and up to thirty-five, is ſuppoſed to be near the decreaſe of a ſociety at large

large throughout Europe, comprehending together cities, towns, and country, "that is, "mankind enjoy amongſt them from about "32, 33 to 35 years each of exiſtence."

The Abbe Reynal, that elegant and philanthropic French hiſtorian, calculates that 1-7th of the African negroes die annually in the Weſt India iſlands, which he aſcribes not ſo much to the climate, for that certainly is preferable to Africa, but to the oppreſſion of their maſters. He computes, that out of nine millions of thoſe injured men, dragged by violence from their own country to eternal ſlavery in America, and the Weſt India Iſlands, and compelled like horſes or mules to exhauſt their blood and ſweat, to pamper avaritious tyrants in idleneſs and luxury, ſcarce one million and a half, now ſurvive. This aſtoniſhing decreaſe, with deference to that amiable author, I believe is principally to be imputed to doubts and prejudices entertained by the planters, whether it would not be more profitable to import grown-up negroes, than to propagate the breed in their different plantations. From this inhuman and barbarous policy, fewer wretches now ſurvive to linger in miſery.

PROVIDENCE has wiſely ordered, that through the various nations of the world, at leaſt of Europe, more males ſhould be born than females, on account of the waſte by wars, intemperance, and other caſualties to which they are expoſed: more males likewiſe are brought forth ſtill born; and throughout all the periods of infancy, childhood, puberty, and the marriage ſtate, at leaſt until after middle age, the deaths of males exceed thoſe of females. In Dr. Arbuthnot's table in the philoſophical tranſactions, of the difference of ſexes born, in forty-ſix years were baptized of males three hundred and twenty-nine thouſand, ſeven hundred and forty-two, of females three hundred and eight thouſand, ſix hundred and forty-four.

CONSIDERING the perils of childbearing, and many other vexatious diſeaſes to which the female ſex are ſubjected by their particular formation, we might haſtily conclude, that the chances of living longeſt was in favour of the huſband; but the contrary is the fact. Suſmilch in a review of ſeveral kingdoms and principalities of Germany found, that three married men died to two married women, and conſequently that widows were much more numerous than widowers:

five

SHORT alſo found by ſeveral German regiſters, that forty-ſix married men were buried for twenty-nine married women. Dr. Price eſtimates the chance in favour of the wife, as three to two; and upon this calculation, the ſociety of clergy in Scotland eſtabliſhed funds to ſupport their widows. From a return of the clerical widows and widowers, in that part of the iſland, the latter were only in the proportion of twelve to twenty, which ſhews, that more huſbands have died. Davenant makes the widows in England ſtill more numerous, compared to the widowers. At marriage it is true, there is generally a diſproportion of years; the man is commonly from ſix to twelve years older than the woman.

UPON a ſurvey of Edinburgh, and ſome other cities it appeared, that the total of living females were more numerous than the males, as four to three. Davenant's calculation for London, makes the females exceed the males, as thirteen to ten, and in other cities and towns, as nine to eight. At Berlin and Northampton, by accurate accounts, the females alſo conſtitute the majority.

AT Berlin, calculators remarked, that more married women were alive at great ages,

than thoſe who continued ſingle. I obſerve in a late hiſtory of Iceland, by Van Troil of Sweden, that in this iſland too, the women are ſaid to live to a greater age than the men, and thoſe eſpecially who have had many children. Philoſophers ſuggeſt with good reaſon, that following the ſalutary dictates of nature, and uniting in matrimony, contributes to the health and longevity of the female ſex.

Dr. Halley thinks the number alive in any kingdom under ſixteen years of age, conſtitute about one third of all living above that ſtandard. Dr. Price ſuppoſes nearly an equal proportion living, under ſixteen, and above that age, but that the latter are the moſt numerous: other calculators, as Davenant, fix the mean about twenty: I ſhould imagine, that in great cities where there are comparatively fewer breeders, and children than in open country diſtricts, Dr. Halley's or Davenant's calculation is more exact.

Davenant ſays, if the inhabitants in this part of our iſland called England, are ſuppoſed at five million, five hundred thouſand, the total yearly births at one hundred and ninety thouſand, the ſundry ages of all thoſe inhabitants will be as follows: under one year old

are

are living one hundred and ſeventy thouſand: under five years old, eight hundred and twenty thouſand: under ten years old, one million, five hundred and twenty thouſand: under ſixteen years old, two millions, two hundred and forty thouſand: this is not one half of the inhabitants. Above ſixteen years old are three millions, two hundred and ſixty thouſand: of which laſt number he reckons ſix hundred thouſand to have paſſed ſixty years of age. It is eaſy to extend this calculation to nine million of inhabitants. On this large ſcale, if the aggregate annual deaths are not ſomewhat inferior to the births, it is plain the kingdom would depopulate; an adequate ſupply of foreign emigrants could alone prevent that event.

SUSMILCH collected with great care a multitude of materials in ſeveral kingdoms of the continent, to enable him to determine with probability, the proportion between the inhabitants reſiding in town and country. If the reſult of his enquiries can be depended upon as a general rule for other European nations, the inhabitants of the country exceed thoſe in cities and towns, as $3\frac{1}{2}$ to 1.

GREAT-Britain and Ireland contain about nine millions of inhabitants at all ages. Half

of thoſe are females, at leaſt we ſhall ſet them down as ſuch to avoid fractions; remain then four millions and a half of males, young and old: of this laſt lot, one half are under ſixteen, or at moſt twenty years of age; thoſe on the other ſide amounting to two millions and a quarter may be called fighting men; but out of them muſt be deducted for aged, infirm, diſeaſed, and cripples, for a diverſity of trades, arts, and manufactories; for agriculture, merchandize, and commerce; for literary profeſſions, ſuch as divines, phyſicians, ſurgeons, medicaſters, and lawyers; for idle gentlemen, and men of independent fortune: how many able fighting men in the vigour of life after all deductions, could ſuch a nation ſupport in her armies and navies for any conſiderable time, without greatly injuring trade, and depopulating the two kingdoms. Soldiers and ſailors do not contribute to the general procreative ſtock in any degree, equal to huſband men and mechanics. Graunt and Davenant have ſome curious ſchemes and calculations of this nature; they are chiefly of a political tendency, though not altogether foreign to medical enquiries.

I HAVE preſented in two ſhort tables, the proportion of mortality throughout every age

in

in London, At birth, the London infant has but an equal chance of living to three years old; but in the country, half arrive at full grown maturity: after reaching five years of age, life is much more ſure in London, and the chances of ſurviving a great number of years prodigiouſly increaſed in the child's favour; it has then eſcaped the wide chaſm which ſwallowed up ſo many of its fellow travellers. From both thoſe tables it is manifeſt, that more die in London under two years old, than from two to upwards of forty; and more under five years old, than from five to between fifty and ſixty: yet under five, there are but an inconſiderable number alive, compared to thoſe above that age; the deaths are greatly diſproportioned to the living numbers or capitals. From eight to ſixteen years of age, 1 out of 70¾ of the Chriſt School Boys are ſaid to die annually; Davenant ſtates the decreaſe in thoſe years at 1 per cent. From twenty to thirty, the bills ſwell in London, and in all other large cities; more die in that interval than in the fifteen preceeding years, from five to twenty. After twenty, by the Breſlaw tables, 3 per cent die annually: De Moivre eſtimates only 2 per cent decreaſe even at thirty-ſix

years of age. One principal reaſon of the great ſwell in the London bills from twenty to forty is, that within this interval of life, the majority of new ſettlers or recruits arrive, and conſequently raiſe the deaths from twenty to forty, conſiderably beyond their due proportion. The ſame cauſe operates more or leſs, in all towns, where there is an exceſs of burials above the births.

We are not to ſuppoſe, that in every inſtance there will be annually a regular arithmetical diminution in the exact proportion, adjuſted by calculators, for city, town and country mortality: ſome years, fewer may happen to die, and in other years a greater number.

Dr. Short's Table, from JANUARY 1st. 1728 to 1743, a period of fifteen years died by the London bills at all ages, taken at a medium in the following proportions.

Years	died under 2 years old	from 2 to 5,	5 to 10,	10 to 20,	20 to 30,
Numbers	9910	2411	980	851	2060

Years	30 to 40,	40 to 50,	50 to 60,	60 to 70,	70 to 80,
Numbers	2471	2510	2234	1675	1209

80 to 90,	90 to 100,
634	117

Total annual medium of deaths in this period, 27058.

A TABLE of thirty years, taken from the London bills, beginning with 1728, and ending with 1757, shewing the *total* number of deaths and decreaſe in this period at every age.

Years	died under 2 years old	from 2 to 5,	5 to 10,	10 to 20,	20 to 30,
Numbers	272903	64745	25912	22891	58474

Years	30 to 40,	40 to 50,	50 to 60,	60 to 70,	70 to 80,
Numbers	71502	73258	59872	47269	33679

80 to 90,	90 to 100,	100 to 138,
16948	496	242

Total deaths in this period at all ages, 750322.

I AM

I AM uncertain whether all the caſualties are added to the burials in the foregoing table, which is taken from Birch's collection.

A TABLE of Dr. Price's, from the bills of one pariſh, in the ſmall country town of Northampton, beginning with 1735, and ending with 1770; a ſpace of thirty-ſix years. In this interval were chriſtened 3242, buried 3690.

Years	died under 2 years old	from 2 to 5,	5 to 10,	10 to 20,	20 to 30,
Numbers	1206	276	155	155	297

Years	30 to 40,	40 to 50,	50 to 60,	60 to 70,	70 to 80,
Numbers	257	297	309	293	285

80 to 90,	90 to 100,	
155	14	Total 3690.

THE following ten Tables are ſelected from ſeveral authors, but may be found in Dr. Price's works, intermixed with a maſs of other calculations, chiefly relative to annuities and pecuniary tranſactions: their medical utility in illuſtrating the ratio of mortality in cities, towns and country, will be evident at firſt view.

OF

Shewing the Probability of the Duration of Life in LONDON, deduced by Mr. *Simpson* from observations on the Bills of Mortality in LONDON for 10 years, from 1728 to 1737.

Ages	Persons living.	Decr. of Life	Ages	Persons living.	Decr. of Life	Ages	Persons living.	Decr. of Life
0	1000	320	27	321	6	54	135	6
1	680	133	28	315	7	55	129	6
2	547	51	29	308	7	56	123	6
3	496	27	30	301	7	57	117	5
4	469	17	31	294	7	58	112	5
5	452	12	32	287	7	59	107	5
6	440	10	33	280	7	60	102	5
7	430	8	34	273	7	61	97	5
8	422	7	35	266	7	62	92	5
9	415	5	36	259	7	63	87	5
10	410	5	37	252	7	64	82	5
11	405	5	38	245	8	65	77	5
12	400	5	39	237	8	66	72	5
13	395	5	40	229	7	67	67	5
14	390	5	41	222	8	68	62	4
15	385	5	42	214	8	69	58	4
16	380	6	43	206	7	70	54	4
17	375	5	44	199	7	71	50	4
18	370	5	45	192	7	72	46	4
19	365	5	46	185	7	73	42	3
20	360	5	47	178	7	74	39	3
21	355	5	48	171	6	75	36	3
22	350	5	49	165	6	76	33	3
23	345	6	50	159	6	77	30	3
24	339	6	51	153	6	78	27	2
25	333	6	52	147	6	79	25	
26	327	6	53	141	6			

Shewing the *true* Probabilities of Life in London for all Ages. Formed from the Bills for 10 years, from 1759 to 1768. By Dr. Price.

Ages.	Persons living.	Decr. of Life.	Ages.	Persons living.	Decr. of Life.	Ages.	Persons living.	Decr. of Life.
0	1518	486	31	404	9	62	132	7
1	1032	200	32	395	9	63	125	7
2	832	85	33	386	9	64	118	7
3	747	59	34	377	9	65	111	7
4	688	42	35	368	9	66	104	7
5	646	23	36	359	9	67	97	7
6	623	20	37	350	9	68	90	7
7	603	14	38	341	9	69	83	7
8	589	12	39	332	10	70	70	6
9	577	10	40	322	10	71	70	6
10	567	9	41	312	10	72	64	6
11	558	9	42	302	10	73	58	5
12	549	8	43	292	10	74	53	5
13	541	7	44	282	10	75	48	5
14	534	6	45	272	10	76	43	5
15	528	6	46	262	10	77	38	5
16	522	7	47	252	10	78	33	4
17	515	7	48	242	9	79	29	4
18	508	7	49	233	9	80	25	3
19	501	7	50	224	9	81	22	3
20	494	7	51	215	9	82	19	3
21	487	8	52	206	8	83	16	3
22	479	8	53	198	8	84	13	2
23	471	8	54	190	7	85	11	2
24	463	8	55	183	7	86	9	2
25	455	8	56	176	7	87	7	2
26	447	8	57	169	7	88	5	1
27	439	8	58	162	7	89	4	1
28	431	9	59	155	8	90	3	1
29	422	9	60	147	8			
30	413	9	61	139	7			

The reader may find in Dr. Price's works a separate essay on the proper method of constructing tables for determining the rate of mortality.

Shewing the Probabilities of Life at VIENNA, formed from the Bills for eight Years, as given by Mr. SUSMILCH, in his *Gottliche Ordnung*.

Age.	Living.	Decr.	Age.	Living.	Decr.	Age.	Living.	Decr.
0	1495	682	31	364	6	62	129	6
1	813	107	32	358	5	63	123	7
2	706	61	33	353	6	64	116	7
3	645	46	34	347	7	65	109	8
4	599	33	35	340	8	66	101	8
5	566	30	36	332	8	67	93	8
6	536	20	37	324	8	68	85	7
7	516	11	38	316	9	69	78	7
8	505	9	39	307	9	70	71	6
9	496	7	40	298	8	71	65	5
10	489	6	41	290	7	72	60	5
11	483	5	42	283	6	73	55	4
12	478	5	43	277	6	74	51	4
13	473	6	44	271	7	75	47	5
14	467	6	45	264	8	76	42	5
15	461	6	46	256	9	77	37	5
16	455	7	47	247	9	78	32	5
17	448	6	48	238	9	79	27	4
18	442	6	49	229	9	80	23	3
19	436	6	50	220	8	81	20	2
20	430	5	51	212	7	82	19	2
21	425	5	52	205	7	83	16	2
22	420	5	53	198	7	84	14	2
23	415	6	54	191	7	85	12	2
24	409	6	55	184	8	86	10	2
25	403	6	56	176	8	87	8	2
26	397	6	57	168	9	88	6	2
27	391	7	58	159	8	89	4	1
28	381	7	59	151	8	90	3	1
29	377	7	60	143	7	91	2	1
30	370	6	61	136	7	92	1	1

Shewing the Probabilities of Life at BERLIN, formed from the Bills from 4 Years, from 1752 to 1755, given by Mr. SUSMILCH, * in his *Gottliche Ordnung*.

Age.	Living	Decrs.	Age.	Living	Decrs.	Age.	Living	Decr.
0	1487	524	33	361	7	65	118	6
1	903	151	34	354	7	66	106	7
2	752	61				67	99	7
3	691	73	35	347	8	68	92	6
4	618	45	36	339	9	69	86	6
			37	330	10			
5	573	21	38	320	10	70	80	6
6	552	15	39	310	10	71	74	6
7	536	13				72	68	6
8	523	9	40	300	10	73	62	5
9	514	7	41	290	9	74	57	5
			42	281	8			
10	507	5	43	274	7	75	52	5
11	502	4	44	266	7	76	47	5
12	498	4				77	42	5
13	494	4	45	259	7	78	37	5
14	490	4	46	252	7	79	32	4
			47	245	7			
15	486	4	48	238	7	80	28	4
16	482	5	49	231	7	81	24	3
17	477	5				82	21	2
18	472	5	50	224	7	83	19	2
19	467	6	51	217	7	84	17	2
			52	210	7			
20	461	6	53	203	8	85	15	2
21	455	6	54	195	8	86	13	2
22	449	6				87	11	2
23	443	7	55	187	8	88	9	2
24	436	8	56	179	8	89	7	1
			57	171	8			
25	428	9	58	163	9	90	6	1
26	421	9	59	154	9	91	4	1
27	412	9				92	5	1
28	403	9	60	145	8	93	3	1
29	394	9	61	137	7	94	2	1
			62	130	6			
30	385	9	63	124	6			
31	376	8	64	118	6			
32	368	7						

* This writer has alſo given the bills of the pariſh of St. *Peter's* at Berlin, for 24 years; and a Table formed from them, agrees nearly with this.

Shewing the Probabilities of the Duration of Life, as deduced by Dr. *Halley* from Observations on the Bills of Mortality of BRESLAW.

Ages.	Living.	Decr.	Ages.	Persons living.	Decr. of Life.	Ages.	Persons living.	Decr. of Life.
0	000	00						
1	1000	145	31	523	8	61	232	10
2	855	67	32	515	8	62	222	10
3	798	38	33	507	8	63	212	10
4	760	28	34	499	9	64	202	10
5	732	22	35	490	9	65	192	10
6	710	18	36	481	9	66	182	10
7	692	12	37	472	9	67	72	10
8	680	10	38	463	9	68	162	10
9	670	9	39	454	9	69	152	10
10	661	8	40	445	9	70	142	11
11	653	7	41	436	9	71	131	11
12	646	6	42	427	10	72	120	11
13	640	6	43	417	10	73	109	11
14	634	6	44	407	10	74	98	10
15	628	6	45	397	10	75	88	10
16	622	6	46	387	10	76	78	10
17	616	6	47	377	10	77	68	10
18	610	6	48	367	10	78	58	9
19	604	6	49	357	11	79	49	8
20	598	6	50	346	11	80	41	7
21	592	6	51	335	11	81	34	6
22	586	7	52	324	11	82	28	5
23	579	6	53	313	11	83	23	4
24	573	6	54	302	10	84	19	4
25	567	7	55	292	10	85	15	4
26	560	7	56	282	10	86	11	3
27	553	7	57	272	10	87	8	3
28	546	7	58	262	10	88	5	2
29	539	8	59	252	10	89	3	2
30	531	8	60	242	10	90	1	1

Shewing the Probabilities of Life at Norwich. By Dr. Price.

Age.	Perf. living.	Decr. of Lif.	Age.	Perf. living.	Decr. of Lif.	Age.	Perf. living.	Decr. of Lif.
0	1185	320	32	392	6	63	174	9
1	865	160	33	386	6	64	165	9
2	705	60	34	380	6	65	156	9
3	645	32	35	374	6	66	147	9
4	613	23	36	368	6	67	138	9
5	590	20	37	362	6	68	129	9
6	570	16	38	356	6	69	120	9
7	554	13	39	350	7	70	111	9
8	541	11	40	343	6	71	102	8
9	530	9	41	337	6	72	94	8
10	521	7	42	331	6	73	86	8
11	514	6	43	325	7	74	78	8
12	508	6	44	318	7	75	70	8
13	502	5	45	311	7	76	62	7
14	497	5	46	304	7	77	55	7
15	492	5	47	297	7	78	48	6
16	487	5	48	290	7	79	42	5
17	482	5	49	283	7	80	37	5
18	477	5	50	276	7	81	32	4
19	472	5	51	269	7	82	28	4
20	467	6	52	262	7	83	24	4
21	461	6	53	255	8	84	20	3
22	455	6	54	247	8	85	17	3
23	449	6	55	239	8	86	14	3
24	443	6	56	231	8	87	11	2
25	437	6	57	223	8	88	9	2
26	431	7	58	215	8	89	7	2
27	424	7	9	207	8	90	5	2
28	417	7	60	199	8	91	3	2
29	410	6	61	191	8	92	1	1
30	404	6	62	183	9	93	1	1
31	398	6						

Shewing the Probabilities of Life at NORTHAMPTON. By Dr. Price.

Ages.	Persons living.	Decr. of Life.	Ages.	Persons living.	Decr. of Life.	Ages.	Persons living.	Decr. of Life.
0	1149	300	31	428	7	62	187	8
1	849	127	32	421	7	63	179	8
2	722	50	33	414	7	64	171	8
3	672	26	34	407	7	65	163	8
4	646	21	35	400	7	66	155	8
5	625	16	36	393	7	67	147	8
6	609	13	37	386	7	68	139	8
7	596	10	38	379	7	69	131	8
8	586	9	39	372	7	70	123	8
9	577	7	40	365	8	71	115	8
10	570	6	41	357	8	72	107	8
11	564	6	42	349	8	73	99	8
12	558	5	43	341	8	74	91	8
13	553	5	44	333	8	75	83	8
14	548	5	45	325	8	76	75	8
15	543	5	46	317	8	77	67	7
16	538	5	47	309	8	78	60	7
17	533	5	48	301	8	79	53	7
18	528	6	49	293	9	80	46	7
19	522	7	50	284	9	81	39	7
20	515	8	51	275	8	82	32	6
21	507	8	52	267	8	83	26	5
22	499	8	53	259	8	84	21	4
23	491	8	54	251	8	85	17	4
24	483	8	55	243	8	86	13	3
25	475	8	56	235	8	87	10	2
26	467	8	57	227	8	88	8	2
27	459	8	58	219	8	89	6	2
28	451	8	59	211	8	90	4	2
29	443	8	60	203	8	91	2	1
30	435	7	61	195	8	92	1	1

Shewing the Probabilities of Life in the District of VAUD, SWITZERLAND, from the Registers of 43 Parishes, given by Mr. *Muret*, in the First Part of the BERN Memoirs for the Year 1766.

Age.	Living	Decr.	Age.	Living	Decr.	Age.	Living	Decr.
0	1000	189	31	558	5	62	286	12
1	811	46	32	553	5	63	274	12
2	765	30	33	548	4	64	262	12
3	735	20	34	544	5			
4	715	14				65	250	14
			35	539	6	66	236	16
5	701	13	36	533	6	67	220	18
6	688	11	37	527	7	68	202	18
7	677	10	38	520	7	69	184	16
8	667	8	39	513	7			
9	659	6				70	168	15
			40	506	6	71	153	13
10	653	5	41	500	6	72	140	11
11	648	5	42	494	6	73	129	10
12	643	4	43	488	6	74	119	10
13	639	4	44	482	6			
14	635	4				75	109	11
			45	476	7	76	98	13
15	631	5	46	469	8	77	85	14
16	626	4	47	461	10	78	71	13
17	622	4	48	451	10	79	58	12
18	618	4	49	441	10			
19	614	4				80	46	10
			50	431	9	81	36	7
20	610	4	51	422	8	82	29	5
21	606	4	52	414	8	83	24	4
22	602	5	53	406	9	84	20	3
23	597	5	54	397	9			
24	592	5				85	17	3
			55	388	11	86	14	3
25	587	5	56	377	13	87	11	2
26	582	5	57	364	16	88	9	2
27	577	5	58	348	17	89	7	1
28	572	5	59	331	17			
29	567	4				90	5	1
			60	314	15			
30	563	5	61	299	13			

Shewing the Probabilities of Life in a Country Parish in BRANDENBURG, formed from the Bills for 50 Years, from 1710 to 1759, as given by Mr. SUSMILCH, in his *Gottliecbe Ordnung*.

Age.	Living.	Decr.	Age.	Living.	Decr.	Age.	Living.	Decr.
0	1000	225	31	482	5	62	260	12
1	775	57	32	477	5	63	248	12
2	718	31	33	472	5	64	236	12
3	687	23	34	467	5	65	224	11
4	664	22	35	462	6	66	213	11
5	642	20	36	456	6	67	202	12
6	622	15	37	450	6	68	190	12
7	607	12	38	444	6	69	178	12
8	595	10	39	438	6	70	166	13
9	585	8	40	432	5	71	153	15
10	577	7	41	427	5	72	138	16
11	570	6	42	422	5	73	122	15
12	564	5	43	417	5	74	107	14
13	559	5	44	412	6	75	93	13
14	554	5	45	407	6	76	80	12
15	549	5	46	400	6	77	68	9
16	544	5	47	394	6	78	59	8
17	539	4	48	388	7	79	51	7
18	535	4	49	381	7	80	44	6
19	531	4	50	374	7	81	38	6
20	527	5	51	367	8	82	32	6
21	522	5	52	359	8	83	25	6
22	517	5	53	351	8	84	21	5
23	512	5	54	343	9	85	15	4
24	507	5	55	334	10	86	11	3
25	502	4	56	324	10	87	8	2
26	498	3	57	314	10	88	6	2
27	495	3	58	304	11	89	4	1
28	492	3	59	293	11	90	3	1
29	489	3	60	282	11	91	2	1
30	486	4	61	271	11	92	1	1

Shewing the Probabilities of Life in the Parish of HOLY-CROSS, near SHREWSBURY, formed from a Register kept by the Rev. Mr. *Gorsuch*, for 20 years, from 1750 to 1770.

Age.	Living	Decr.	Age.	Living	Decr.	Age.	Living	Decr.
0	1000	178	31	481	5	62	253	10
1	882	60	32	476	5	63	243	10
2	762	45	33	471	5	64	233	10
3	717	35	34	466	6			
4	682	23				65	223	10
			35	460	6	66	213	10
5	659	23	36	454	7	67	203	10
6	636	18	37	447	7	68	193	11
7	618	14	38	440	7	69	182	11
8	604	9	39	433	7			
9	595	6				70	171	10
			40	426	8	71	161	10
10	599	4	41	418	8	72	151	9
11	585	4	42	410	9	73	142	8
12	581	4	43	401	8	74	134	8
13	577	4	44	393	7			
14	573	4				75	126	7
			45	386	7	76	119	7
15	569	4	46	379	7	77	112	7
16	565	5	47	372	7	78	105	7
17	560	5	48	365	6	79	98	8
18	555	5	49	359	6			
19	550	5				80	90	9
			50	353	6	81	81	10
20	545	6	51	347	7	82	71	10
21	539	7	52	340	7	83	61	10
22	532	7	53	333	7	84	51	10
23	525	7	54	326	8			
24	518	6				85	41	9
			55	318	8	86	32	8
25	512	6	56	310	9	87	24	7
26	506	5	57	301	9	88	17	6
27	501	5	58	292	9	89	11	4
28	496	5	59	283	10			
29	491	5				90	7	2
			60	273	10	91	5	1
20	486	5	61	263	10	92	4	1

OF THE CAUSES OF DEPOPULATION IN GREAT CITIES.

GREAT cities, if we exclude Rome and Conſtantinople, are of modern date in many kingdoms of Europe. In the ninth century, a few had been built in Germany; but in England corporations, and conſiderable towns, are poſterior to the Norman conqueſt. Even in the reign of Harry the ſecond, London contained only forty thouſand inhabitants. Cities, aſſociated communities, and towns, during the religious fever of Cruſading, and after the termination of this epidemical diſtemper, were Aſylums from Ariſtocratic tyranny; they are now the graves of young infants Standing in ſeveral European nations, in the relation of city and town inhabitants to thoſe of the country, as 1 to 3 $\frac{1}{2}$, they are drains of the human ſpecies. The

firſt great and univerſal cauſe muſt be imputed to the foul and turbid atmoſphere of cities, and its poiſonous effects upon infants; to cloſe ſtreets, alleys, lanes, and habitations of the poor, where free ventilation and circulation of the air is obſtructed. In the conſtruction of theſe human hives, health and population has been criminally overlooked; but no one cauſe alone will account for their depopulation, we can trace it to a multitude of ſources. In attempting therefore ſome illuſtration of this ſubject, my few deſultory obſervations will be pointed to the Britiſh metropolis.

LONDON bills by no means give an exact regiſter of births and mortality: Jews, Quakers, Papiſts, and Proteſtant Diſſenters, are not included in the yearly births, and great numbers of their burials, and of burying places, not only of the diſſenting, but likewiſe of the eſtabliſhed church, are omitted, of the former thirty-two, and of the latter thirty-three, according to Short's liſt; the large pariſhes of Pancras and Mary-le-bone, in one of which ſtands the Foundling Hoſpital, are excluded from the bills. Maitland diſcovered one hundred and eighty one religious congregations, whoſe chriſtenings were not publiſhed in the annual regiſters. Six hundred abortive

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and ſtill born, who have arrived at an age, thought deſerving of burials, are ſet down to the deaths, but omitted in the liſt of births. Dr. Price rates the annual deficiency of the London burials at ſix thouſand, and of the births ſomewhat greater, neither of which are brought to account in the public regiſters: ſo that every year there is, upon an average, an exceſs of deaths above the births, in this metropolis, of at leaſt five or ſix thouſand: in the laſt ten years, this waſte ſeems by the bills a little abated. The materials, alas! for forming ſuch calculations are exceeding confuſed.

London

LONDON BILLS at a medium annually.

Years	Chriſtenings	Burials
From 1671 to 1781	12325	19144
1681 to 1691	14439	22363
1691 to 1700	14938	20770
1700 to 1705	15758	21091
1706 to 1710	15489	21832
1711 to 1715	16204	22178
1716 to 1720	18019	25641
1721 to 1725	18828	26513
1726 to 1730	17578	28472
1731 to 1735	17517	25491
1736 to 1740	16145	27494
1741 to 1745	14419	25351
1746 to 1750	14496	25351
1751 to 1756	15119	21080
1759 to 1768	15710	22956
1770 to 1780	17218	nearly about 2100

DAVENANT calculated the number of houſes in the metropolis and the county to be more numerous in the year 1690, than Dr. Price will admit them to be at preſent.—If London, before the beginning of this century, conſiſted of ſo many diſtinct though ſmall, compared to the preſent houſes, with ſeparate families, amounting on an average to about five in each family; (the uſual calcula-

culation for country towns, and for ſome pariſhes in the capital) and at this time, the number of houſes are decreaſed ten, fifteen, or twenty thouſand, with an *equal* number to each houſe, then without doubt, contrary to the evidence of our ſenſes, we muſt believe the metropolis itſelf to have been more populous eighty or ninety years ago. The truth ſeems to be, that the London inhabitants are now much more widely diſperſed, and to an immenſe extent, in ſmall villages, retirements and country-houſes over all the different ſurrounding counties.

COMPARE the London births and burials of the laſt thirty years, with the thirty preceeding; the deaths of late are greatly decreaſed in proportion to the births. Might not therefore this alleged diminution of population, from finding a decreaſe in the burials, be accounted for, by ſuppoſing that formerly the city was cloſe confined and unhealthy, eſpecially to infants, that then too perhaps proportionally more breeders ſupported the metropolis. Fifty other reaſons may be aſſigned: London ſtreets are now widened, the inhabitants live leſs crowded together, the houſes ſtand upon double or treble the ground which they formerly occupied, ventilation is freer, the city is more plentifully

tifully ſupplied with water and fuel, both extremely neceſſary in preſerving health, in preventing ſickneſs and infections fevers originating from foul ſtagnant air, filth and uncleanlineſs; the ſtreets are better paved, and have all flagged foot paths; ſewers and drains are made to carry off moiſture and corruption; there are many more country houſes and agreeable outlets, if not in the county, in the vicinity of London, where families and children may enjoy freſh air and exerciſe; the high roads round the capital, and throughout the kingdom, are greatly improved, and invite more to exerciſe; academies for the education of children are increaſed in the environs, and in the country; the better and middling claſſes of people at leaſt, drink leſs than formerly. In vain we look for any compliment to the ſtanding forces of Eſculapius, to modern diſcoveries and improvements in medicine: calculators reecho the decay of population and of inhabitants; they are nevertheleſs pleaſed to allot ſome ſubordinate degree of merit, to bricklayers, commiſſioners of ſewers, ſtreet paviours, and ſcavengers.

Besides the pernicious effects of foul city atmoſphere upon young infants, and in a ſmaller degree upon grown-up perſons, particularly in ſickneſs; other cauſes conſpire to ſink the births beneath the the ſtandard of the

burials

them I include fewer breeders in cities. Our own ſenſes and obſervation may here be conſulted in lieu of doubtful calculations. In proportion to the eaſy means of acquiring a moderate ſubſiſtence for children, the population in general will be greater: this was lately the exact caſe with our North American colonies. Another reaſon which tends to increaſe country population is, that there, in the unmarried condition, life is a languid pilgrimage, and for a variety of reaſons, they enter into the ſtate of wedlock with fewer ſcruples; but in large and populous cities, men (and women if they chuſe it) have unmoleſted opportunities of revelling in diſſipation and vice; in their younger days they are ſeduced by the deceitful allurements of courtezans, and until the fire of youth is ſomewhat blunted, are more averſe to early matrimony than thoſe placed in remote parts of the country; in theſe tranquil abodes, the mind is leſs debauched, and fewer opportunities preſent to indulge in licentious gratifications. The expences of a houſhold, and the proſpect of increaſed burthens, in providing handſomely for a family, the difficulties again amongſt the lower and laborious orders in cities, of ſub-

ſiſting, as the neceſſaries of life riſe in price, with the eaſy means of gratifying the ſenſual paſſions, all contribute their ſhare in London, and other great capitals to diſcourage matrimony. Even amongſt the higher and middle orders where taxes are enormouſly multiplied, where ſhows, public amuſements, extravagance, and diſſipation are faſhionable, and one of the darling objects of gratification, numbers of both ſexes are frighted from wedlock, and population is checked.

LONDON and Paris contain multitudes of maids, batchelors, and profeſſed courtezans, uſeleſs drones, who add no increaſe to the common ſtock, in reſpect of procreation. The increaſe of the army and navy, of law, commerce, and private fortunes, and the commodious agreeable manner of travelling, draw numbers now to the Britiſh capital for pleaſure, buſineſs or curioſity; more foreigners viſit us; the number of large houſes in London are multiplied, where we may find a long train of unmarried domeſticks; all thoſe different deſcriptions of perſons, which probably are rather augmented, will have ſome effect in detracting from the annual proportion of births. Probably, likewiſe in cities, from the diſſipation, and incontinence of

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the married ſtate, fewer children are produced than by country marriages; but the principal reaſon I imagine is, that in the latter, they enter earlier into matrimony, and afterwards perhaps, have fewer cloudy apprehenſions of overſtocking their houſe with children.

"Country marriages, one with another, "ſeldom produce leſs than four children "each, generally between four and five, and "ſometimes above five; but in towns ſeldom "above four, generally between three and "four, and ſometimes under three."

HIGH refinement and large cities are obſtacles to population, ſo is a wild ſtate of nature. A few tribes of American Indians with difficulty find ſubſiſtence in a large tract of woody uncultivated country; the huſbands are cold inſenſible mortals; the allurements of dreſs and education are alſo wanting to give a ſpur to the paſſions. In North America, the infants of the Indians are ſuckled ſeveral years, and after nurſing two or three children, the period of propagation is almoſt finiſhed: the fatigues and perils which they are obliged to undergo in procuring ſubſiſtence, would not permit them to ſupport two or three young infants at the ſame time. A medium ſtate between high refinement and

rude ſavageneſs, is moſt favourable to population: in the country, and particularly in the back ſettlements of North America, they bundle and marry when young, and breed a numerous progeny,

I FIND upon many occaſions, the propriety and force of Celſus's maxim, that medicine is a circle. An attempt fully to explain the cauſes which may with probability be concluded as acceſſary to the diminution of mortality in London, is warped with medical queſtions, and with a general ſurvey of diſeaſes. We ſhould examine the effects upon different ages of a foul atmoſphere, of animal effluvia, of uncleanlineſs, of contagion, whether bred in jails or hoſpitals, or by filth in private houſes, of moiſt vapours emitted from the earth, and of the diet and liquors now conſumed. Before the beginning of the preſent century, very few vegetables were eat in London, and ſcarce any public gardens to rear vegetables had been planted round the city, the ſurge and decreaſe of diſeaſes, the ſtate of medicine, and diſcovery of new remedies, ſhould all be taken into the account: this inquiry will lead into a wide ocean, and is more cloſely connected with the matter of the following Chapter.

FRESH

FRESH air next to food, ſeems to be an element, the purity of which materially conduces to the health and life of young infants. The fatal conſequences of city atmoſphere upon their delicate conſtitutions, are univerſally notorious in great cities, even amongſt nations conſpicuous for ſobriety. This general law demonſtrates, that raw ſpiritous liquors drank often by ſuckling mothers and nurſes, upon which calculators who have written upon the London bills lay ſo much ſtreſs, are but ſecondary evils, and far inferior to the former. The laborious claſs cannot afford time to carry their infants out daily to the open areas and ſuburbs, to breathe a little wholeſome air, or even to enjoy a neceſſary degree of exerciſe; they pine away like young plants, buried in a noiſome cellar. Perhaps too in great cities, more comparatively of the parents of young infants, have injured their conſtitutions by precipitate irregularities and debauchery; their offſpring we may conceive will be more debilitated and frail, than thoſe of ſtrong healthy parents, accuſtomed to induſtry, ſobriety, and regularity. The recovery of infants from diſeaſes, ſuch as ſmall-pox, meaſles, or any other ſickneſs, will be greatly checked

checked by a foul atmoſphere, and rendered more hazardous.

NEXT to the mortality of infants, Dr. Price aſſumes it as an eſtabliſhed propoſition, "that the *ſecond* great cauſe of depopulation "in London, takes place amongſt the new "*annual ſettlers*, to whom the air, modes "of life, and debaucheries of the metropo- "lis, are particularly hurtful and pernicious, "and that (excluſive of their greater num- "bers) this is one of the principal reaſons "why the bills ſwell in the city after twenty "years of age.

THE annual waſte of London requires about five or ſix thouſand recruits. The new ſettlers Dr. Price ſuppoſes to arrive chiefly from twenty to forty years of age, and this afflux it is evident muſt ſwell the burials in that interval of life, by adding to the number of inhabitants, and raiſing the deaths above the due proportion, when compared to the mortality before twenty. Certain it is, that numbers come from the country to London under twenty years of age, to ſerve apprentiſhip's in trade, law, mechanical profeſſions, and as ſervants, but Dr. Price is of opinion, that they are more than counterbalanc'd, by thoſe ſent out of the metro-

polis

polis under puberty for education, to ſchools and univerſities: yet in this caſe, the polluted air of London ſhould exert its pernicious effects upon the young ſtrangers, much more than upon the original and half ſeaſoned inhabitants arrived at the ſame years. A large part likewiſe of the annual recruits compoſed of natives and ſome foreigners, we muſt imagine have been born and reared in cities and towns, either as artizans, mechanics, or idle people. I am inclined to think, that Small-pox has ſome ſhare in increaſing the mortality of the new ſettlers.

When we attentively reflect upon the exceſs of infant deaths under five years of age in London, and the ſmall number of breeders, a great ſurplus of deaths by new recruits will not be required to account for the London waſte. The majority of the new ſettlers will probably be unmarried perſons, who do not ſo ſoon form matrimonial connections, as if they had remained in their original habitations with their friends and acquaintances. The ſmall portion of breeders I before obſerved, was a principal cauſe why out of nine millions of negroes exported to America, and the Weſt Indies, one million and a half now only ſurvive.

London

London atmoſphere and debaucheries, I ſhall not deny, are fatal to a ſmall number of the new recruits; but after a year or two, men become habituated to great changes and diverſity of climate; within that time, Europeans are tolerably well ſeaſoned, even in the Eaſt and Weſt Indies. I apprehend that from twenty to forty is univerſally a more mortal period, than from ten to twenty, though in a leſs ſevere degree in the country than in large cities; and in this reſpect, the bill of a pariſh in a ſmall country town Northampton, given by Dr. Price, correſponds with London. From eighteen to thirty-five is the principal conſumptive age amongſt both ſexes, debaucheries and irregularities are then moſt prevalent; in all pulmonary complaints likewiſe, and indeed in ſickneſs of every denomination, pure country air contributes greatly to the recovery.

Numerous cities, towns and harbours, have been built upon low unhealthy ſituations, ſurrounded with hills or moraſſes; moſt cities ſeem to have grown up by time, accident and chance, the ſtreets are irregular, and the inhabitants crowded into too ſmall a ſpace; all theſe are objects of the firſt legiſlative magnitude in every nation. Few great capitals in Europe can be compared to London in healthy

thy ſituation and other conveniences; yet we may remark, that the comparative proportion of its burials rather exceed thoſe of Amſterdam, which ſtands in the midſt of ſlime, mud and moraſſes. Cuſtom and habit we know ſeaſon men to unwholſome climates and ſtations: but beſides, there are fewer people in Amſterdam, the ſtreets are more regular and open to ventilation than the old buildings of London; there is alſo leſs luxury, licentiouſneſs and profligacy to diminiſh population.

DAVENANT calculates, that before the beginning of the preſent century, England and Wales contained one million, three hundred thouſand houſes and cottages. Dr. Price eſtimates the houſes now, rather under one million. This certainly indicates an alarming depopulation in the kingdom. The ſubject is of a political nature, and of infinite extent; it is connected with the ſtate of government, of religion, of foreign colonization, of emigration to remote parts of the Empire, with trade, agriculture, and the incloſure of commons; with the frequency of wars, the increaſe of taxes, luxury and refinement in the higher and middling claſſes, and with all the cauſes before enumerated, which more or leſs diminiſh the national ſtock.

CHAP. III.

The Diſeaſes which annoy, and occaſion the Principal Mortality amongſt Mankind, and an Attempt to form a groſs comparative Eſtimate or probable Ratio of the Numbers deſtroyed by each: a few Tables, each of equal Periods, ſhewing by the London Bills, the Diſeaſes, Caſualties and Deaths at every age, during ninety Years in this Metropolis, and which exterminated above two Millions of the Human Species: Critical Reflections upon thoſe Diſeaſes, and the Bills.

IN the preceding chapter it has been confirmed by mathematical demonſtration, that an inconſiderable handful of mankind ſurvive to ſeventy or eighty years of age; a few it is true have reached one hundred, or even one hundred and fifty, Jenkins lived to one hundred and ſixty-five. It is alſo obſervable, that thoſe who enjoyed ſuch uncommon longevity, had no general ſettled ſyſtematic rules of diet. In Bacon, Lord Verulam's hiſtory of long livers, both males and females, their climate, diet, manner of life, appetites, ſtudies, paſſions, habits and diſpoſitions were exceeding

exceedingly diſſimilar. Through all the climates of Europe, Africa, Aſia and America, the rich, the poor, the inhabitants of town and country, with very different climate, nouriſhment, ſoil and conveniences, all ſeldom exceed the uſual term of life allotted in holy writ to man. Seventy or eighty is mentioned by Moſes, in the 90th Pſalm, as the ultimate goal of human exiſtence. The term is very ſhort, and we are all haſtening to the brink of our earthly duration. It would be unjuſt and fruitleſs to repine, "ſeeing that ſo many who "ſet out with us in the journey have been cut "off. The awful period advances by ſlow and imperceptible degrees: univerſal ruin "and the laſt blow will come and cloſe us up "in the grave."

I PROPOSE now to lay out, and to review in one great map, the enormous brood of diſeaſes which diſgorge their virulence over the earth, and wage inceſſant hoſtilities with mankind: by this means we ſhall, to uſe a military phraſe, reconnoitre more diſtinctly our enemies, and be led to make the beſt diſpoſition and preparation for defence where the greateſt danger is apprehended, and the moſt

formidable aſſaults to be ſuſtained. Armed with diſeaſes, the grim king of terrours appears in the moſt hideous aſpect: under theſe various morbific forms, I ſhall track him grappling with mankind, and with his tremenduous ſcythe mowing down generations.

Dr. Price and many other philoſophers, "conſider diſeaſes not as the original intention of nature, but that they are without "doubt in general, of our own creation. "That were there a country where the inhabitants led lives entirely natural and virtuous, few of them would die without "meaſuring out the whole period of preſent "exiſtence allotted to them, pain and diſtempers would be there unknown." This propoſition may be uſeful to encourage morality, but it will not bear a medical ſcrutiny.

In the rude ſtate of ſcience and medicine, it was uſual to aſcribe moſt diſeaſes to the immediate reſentment of ſome inviſible demon, or to divine diſpleaſure and chaſtiſement: early philoſophy ſoon diſcarded ſuch ſupernatural agents. Others again, equally err in ſuppoſing diſeaſes to be unſteady motions of the human machine, excited by ſomething hurtful:

hurtful: they are each beyond diſpute preſented to us over and over again, in nearly the ſame form and ſhape: the diſeaſes delineated two thouſand two hundred years ago, by Hippocrates in Greece, at this day retain the ſame eſſential marks and prominent features: in degree and violence, there unqueſtionably are gradations and ſhades which may vary the picture. This popular error ſeems to originate from confounding diſeaſes themſelves with the practiſe of phyſick.

INFANT deaths from the foul atmoſphere of great cities, furniſh a vaſt ſupply to the gloomy realms of Pluto. Their diſeaſes in the bills are principally accumulated into two aggregate heaps, Convulſions and Teething; upon which I ſhall preſently animadvert.

PHYSICIANS have unanimouſly agreed, that the febrile claſs of diſeaſes, comprehending all the different genera in one cluſter, are the moſt univerſal and fatal; but throughout all countries, in epidemical diſeaſes there are barren and fruitful years, when they are more or leſs prevalent. Great national calamities from epidemical diſtempers are rare, none are ever diffus'd over a whole kingdom, (catarrh in a few rare inſtances, and caſes of general famine excepted) they ſometimes

ſpread

ſpread from province to province, but all are never attacked at once, nor probably are large populous kingdoms ever totally exempted from them. Fevers of different generic forms, as agues, remittent fevers, dyſenteries, malignant and infectious fevers, putrid ſore throat, ſmall pox, meaſles, &c. may be local and circumſcribed to one city, or diſtrict, whilſt others in the vicinity continue healthy, the diſeaſe diſſipating its force within a ſmall boundary.

Dr. Short, from one hundred and fifty five different pariſh regiſters, calculates that in a certain period ſome have had from eight to fourteen ſickly years, whilſt others in the ſame interval have had but one. Five, ſix, and eight years diſtance he eſtimates as a common period for the viſitation of epidemical ſickneſs, even in remote country pariſhes. In one of thoſe intervals it is uſual for Small-pox and Meaſles, excluſive of ſome other epidemicks to make their periodical circuits. By the country regiſters it appears, that a few pariſhes have had the good fortune to eſcape from any unuſual mortality, during ten, twelve, and ſome few twenty, and even thirty years. In all the ſickly ſeaſons of country pariſhes, the burials exceed the chriſtenings, and according to the

nature

nature of the epidemic, and morbid ſtate of the ſeaſon, the mortality varies in degree. In the London bills we frequently obſerve, that in certain weeks or months the deaths riſe double or treble above equal periods of the ſame year. In town and country, the mortality of the winter months is alſo greater than that of the ſummer.

Upon comparing the annual average of deaths in a ſickly year of London and other great cities, with ſickly years in country pariſhes, Dr. Short finds, that cities and towns in this reſpect have the advantage of the country. In large open country places where fatal epidemics broke out, according to this author, more died in one year, than during ſix, ten, twelve, or even fifteen years of health; whereas in London and ſuch cities, ſeldom above a third, fourth, or fifth beyond the ordinary conſumption are carried off. (Plague is certainly now and then an exception to this propoſition,) the Dr. adds, that mortality is more conſtant and regular in cities, and not ſo many deſtroyed "per ſaltum" from ſweeping epidemicks as in the country. In pure open air he ſuggeſts, that contagion or other adulterated effluvia are more virulent; or perhaps he ſhould have ſaid, that in cities where

where the atmoſphere is charged with a load of heterogeneous vapours, emitted from fires and other effluvia, epidemical poiſons may be blunted, decompounded or annihilated. In cities too, human bodies may be more ſeaſoned and habituated to noxious impreſſions from this ſource: Small-pox and Meaſles in particular, are conſtant reſidents in great capitals, and conſequently the decreaſe from theſe diſeaſes is more equal than in the country, where ſeveral years intervene between their periodical invaſions. At preſent I ſtudiouſly ſhun any deeper diſcuſſion of cauſes.

The principal and moſt general epidemics which infeſted England during two entire centuries, are enumerated in a ſhort ſyllabus, by Dr. Short. They are either plagues, agues, remittent fevers, ſpotted putrid fevers, ſlow fevers, dyſenteries, peſtilential and contagious peripneumonies, ſmall-pox, meaſles, fatal ſpring pleuriſies, peripneumonies, and epidemical catarrhs, all of the febrile claſs. De Haen computes, that out of two thouſand ſick taken into the hoſpitals at Vienna, ſeven hundred laboured under acute diſeaſes, fevers of various kinds. Out of five thouſand, ſeven hundred and forty-three ſick, taken into Haſlar Hoſpital, at Portſmouth, by Dr. Lind's account, about three thouſand

were

were ill of fevers. Cleghorn eſtimates the ſummer fevers of Minorca to conſtitute 3-4ths of all the diſeaſes in that iſland. Lind calculates, that of all the numerous Europeans who viſit the ſultry climates of Africa, America, the Eaſt and Weſt Indies, nineteen out of twenty who die in thoſe regions are carried off by fevers and fluxes; and probably he ſhould have ſubjoined, or of chronic diſeaſes, the conſequence of thoſe fevers.

The plague, a febrile demon, cannot at preſent be called one of the general and mortal epidemics of Europe, except in the South-Eaſt extremity poſſeſſed by the Turks. The two greateſt peſtilences on record happened in the ſixth and fourteenth centuries of our era, when millions over the globe were overwhelmed in one general deluge of putrefaction. In London before the great conflagration, in 1666, the plague was very frequent; ſince that event, or at moſt two or three years after, it is extinguiſhed and unknown in this city. From 1562 to 1665, the plague had raged more or leſs in London, including together the different periods of its duration upwards of twenty-five entire years: in 1665, the deaths amounted to very near one hundred thouſand. Regiſters in other parts of Europe ſhew, that this diſeaſe has com-

mitted direful havock. At Marſeilles, they reckon up twenty general plagues which have time to time deſolated that populous city. Many cities and towns in different nations of Europe have ſeverely ſmarted by peſtilence, ſince our emancipation from this formidable tyrant. In the mediterranean ports they are, from fatal experience, extremely vigilant to guard againſt infection. So late as 1743 and 4, the beautiful city of Meſſina, in Sicily, was almoſt entirely depopulated: ſeventy thouſand inhabitants were in a ſhort time exterminated by the plague, which had been introduced by a few bales of infected goods clandeſtinely landed from a ſhip in the harbour.

TRUE plague is chiefly confined to Grand Cairo, and Alexandria, the two hot-beds and nurſeries of peſtilence, to many parts of Syria, to the European and Aſiatic Coaſt, bordering on the Archipelago, to Conſtantinople, and to ſome maritime towns of Arabia and Perſia, which traffick by the Red ſea. About two years ago, Conſtantinople loſt one hundred thouſand inhabitants by this ſingle diſeaſe. Their ignorance of philoſophy and ſtupid notions of irreſiſtible predeſtination, ſubjects the Turks more than any

other

other mediterranean nation to peſtilential contagion. The plague now ſeldom gains admittance into other European ſea-ports, and even if imported, the wiſe precautions and regulations adopted by quarantines, check its irruption; this is a moſt important improvement in the police of modern ſtates, for the original inſtitution and rough draft of which about three hundred years ago, we are indebted to the Venetians. Fortunately for mankind, the infection of plague ſpreads to a very ſmall diſtance through the air, without ſome contact or adheſion to infected goods and porous materials, or by perſonal communication of the ſound inhabitants with the diſeaſed: a neighbour ſhutting himſelf up at a few yards diſtance from an infected houſe, may eſcape unhurt. If the contagion of plague could be ſo ſuddenly and widely ſcattered over a kingdom, as epidemical catarrh or influenza, the earth in a few months would be converted into an enormous church yard, and filled with dead corpſes.

Amongst the univerſal febrile maladies, are thoſe intermittent and remittent fevers, of unwholeſome tropical climates, particularly in

the rainy ſeaſons: in the hot ſultry autumnal ſeaſons of Europe, in low and marſhy ſituations, theſe are alſo the prevailing epidemics: armies in camps are at that time often grievouſly infeſted with them, and the dyſentery generally accompanies them. Over all the middle regions of the earth, from cancer to capricorn, intermittent and remittent fevers, and dyſenteric fluxes are the moſt general, and perhaps fatal epidemics. They deſtroy not only numbers immediately, particularly of the new European ſettlers, but when improperly treated often terminate in chronic complaints, ſuch as dropſies, jaundice, viſceral obſtructions, ſwellings and ſcirrhus of the liver, and broken conſtitutions: relapſes into them are frequent upon premature expoſure to cold, hardſhips, or irregularities in living. Since the diſcovery of antimonials and bark, few now die of this fever compared to the number of ſick; but except conſumptions, ſmall-pox, and perhaps an infectious fever which I ſhall ſoon mention, it may be doubted, whether any other ſingle genus of diſeaſe, deſtroys more of the human ſpecies.

AUTHORS have given various appellations to thoſe intermittent and remittent fevers which are in eſſence the ſame, and cured nearly by ſimilar

ſimilar remedies: they are denominated tertian, ſemitertian, double tertian, triple tertian, hæmitritæa, amphimerina, autumnal epidemic fever, peſtilential tertian, marſh fever, camp fever, bilious, and gall ſickneſs, remittent fever of warm and tropical climates, tertian fever, accompanied with ſeveral irregular ſymptoms, and from the ſymptoms moſt predominant and urgent, the fever has received different names.

ANOTHER fever varying often conſiderably in ſymptoms and violence, is widely diſperſed over the earth; it may ariſe at all ſeaſons of the year, whether hot or cold, and like the plague or ſmall-pox, is frequently communicated by contagion, from one perſon to another, either by approaching too near the ſick, or through the medium of infected goods, cloathes and moveables. It is frequent in jails abounding in filth, and where free ventilation is excluded, in large hoſpitals crowded with ſick, and on board ſhips, ſquadrons and large fleets, particularly when haſtily fitted out: in cities we can frequently trace it to the priſons, to the houſes of the poor, to filth, rags, poverty, and adulterated air. Cities and towns alſo for obvious reaſons, ſeem to be more expoſed to it than the country. Authors call

it

it jail fever, putrid malignant fever, ſpotted and petechial fever, infectious fever, &c. Some not without foundation have ſurmiſed, that ſlow nervous fevers are in general derived from the ſame origin. The ignorance of the ſearchers in medical matters prevent us from determining the preciſe mortality by this genus of fever in London.

The ſweating ſickneſs has long diſappeared from England and from Europe, and cannot therefore be now conſidered as an epidemic cauſe of mortality. Somewhat more than three hundred years ago, this ſingular diſeaſe broke out, for the firſt time, in the army of Harry the 7th, on his return to Milford Haven in Wales, from an expedition againſt France: in four hours ſickneſs, numbers were ſnatched off; but if they kept warm in bed under profuſe ſweats, and ſurvived twenty-four hours, the danger was uſually ſurmounted. It returned back again to England at ſeveral ſubſequent intervals; but happily its greateſt devaſtation was always of ſhort duration.

Putrid ſore throat is another ſpecies of malignant infectious fever. It has been called plague, with carbuncle in the throat reſembling buboes in the groin. Its mortality is not confined

confined to any particular ſeaſon of the year; but although the fever is precipitate, and often fatal to thoſe whom it ſeizes, particularly children, it ſeldom extends over a large tract of country; a ſingle city or a province at moſt bounds its malignity. The revolutions of this infectious diſeaſe are irregular and uncertain. In 1748, a conſiderable number in this country, fell victims to putrid ſore throat: ſcarlet fever is very generally connected with it. In the London bills I ſuſpect they rate its mortality too low, and I imagine it is confounded with putrid, ſcarlet, ſpotted, and malignant fevers.

SIMPLE inflammatory fever is another genus of the febrile claſs, whoſe mortality is trifling compared to ſome of the preceding fevers. Pringle obſerves that in military camps, pleuriſies and peripneumonies, fevers accompanied with local or topical inflammations in the breaſt and lungs, are the moſt frequent forms of inflammatory fever, and next to thoſe acute rheumatiſms, the majority of which originate from colds, and prevail moſt in the winter and ſpring.

Two other fevers ariſing from ſpecific infection, ſmall-pox and meaſles, and their relative mortality, will beſt appear in the following tables. In theſe tables and the comments, are preſented the diſeaſes, acute, and chronic, which

which deſtroyed upwards of two millions in London. Criticiſms will afterwards be with more propriety introduced upon the different diſeaſes and their reſpective fatality. With certain exceptions and precautions, we may in ſome degree make the diſeaſes and caſualties of London ſerve as a morbid barometer to the whole nation.

I COULD have exhibited tables with the diſeaſes and mortality of the laſt century, from 1629; but for a great part of that time the metropolis was inſignificant in ſize, compared to its preſent magnitude, twenty new pariſhes have ſince been gradually added to the annual regiſters. Again, London until 1665 and 66, was infeſted with the plague, which diſeaſe previous to that date, ſeems to have been one primary object of the bills: after the great peſtilence in 1665, London muſt have required ſome years to recruit, and to adopt Graunt's and Dr. Short's ſentiments, the regiſters were then, from various political and religious obſtacles, very negligently managed. For theſe and many other reaſons, I formed four regular tables only of diſeaſes in the preſent century, when London is more ſtationary in numbers, and more populous than at any preceding period of equal duration: the actual and comparative magnitude, riſe, or declenſion of different diſeaſes will

will therefore be more conſpicuous in each table.

HAD I attempted to form ſimilar tables for the laſt century, the reader would have been embarraſſed to no purpoſe, and drowned in figures. For example, in one and the ſame title, are often intermixed in the regiſters of mortality, flux, ſmall-pox and meaſles; conſumptions and tiſſick; cancer, canker and thruſh, and ſometimes wolf, cancer, gangrene and fiſtula, or cancer, gangrene, fiſtula and mortification: gout and ſciatica; vapours and water in the head; quinſey and thruſh; ſores, ulcers, bruiſed and broken limbs; cough, cold, and chin-cough are additional ſpecimens of their abſurdity. Notwithſtanding this rabble of diſeaſes, in commenting upon the the bills of the preſent century, I have referred back, and have contraſted them with the bills of the laſt thirty years, in the preceding century; ſo that as near as the imperfection of the materials would admit, the diſeaſes and mortality of ninety years in London are exhibited, and in a compaſs which cannot perplex with figures and calculations. Where no conſiderable difference appeared in the diſeaſes and mortality of each fifteen years interval of the thirty in the laſt century, I added the two together to prevent unneceſſary arithmetical multiplication, and it is eaſy to half them.

THE Diſeaſes, Caſualties and total Deaths, by the London Bills, during fifteen years, beginning from 1701, and ending with 1716.

Chriſoms	850	Cholick -	1360	Riſing of the Lights -	1219
Head mould ſhot -	386	Twiſting in the Guts	125	Spleen -	42
Water in the Head -	223	Worms -	697	Vapours -	11
Convulſions	91660	Bloody Flux	133	Child-bed	3560
Teeth -	18478	Gripes in the Guts -	12183	Evil -	1020
Infants -	315	Looſeneſs -	181	Leproſy -	19
Thruſh —	839	Vomiting -	161	French-pox	917
Chin-cough	63	Flux ---	178	Scurvy ---	83
Rickets -	3916	Bleeding --	87	Raſh ---	77
Small-pox	22219	Diabetes -	37	Scald Head	9
Meaſles -	1972	Apoplexy	1154	Inflammation -	8
Ague ---	86	Suddenly	1074	Impoſthume	790
Fever -	49189	Lethargy -	105	Mortification	937
Purples -	189	Megrims -	13	Gangrene	136
Spotted Fever —	1498	Palſy ---	332	Burſten -	75
Scarlet Fever	54	Headach -	21	Ruptures -	235
Malignant Fever -	15	Lunatic -	412	Fiſtula -	360
Conſumptions —	42541	Dropſy —	11420	Sores and Ulcers -	695
Aſthma --	424	Tympany -	206	Cancer -	1041
Tiſſick -	4666	Jaundice -	1261	Canker -	138
Cough -	56	Liver grown	76	Wen -	5
Pleuriſy -	384	Gravel and Strangury	66	Swelling -	6
Quinſey --	226	Stone ---	721	White Swelling ---	5
Rheumatiſm	368	Gout ---	313		
		Stoppage of the ſtomach	4139		

THE probable number of abortives, and aged, and of caſualties in this period, will be ſufficiently underſtood by conſulting the ſecond, third and fourth tables. Amongſt the caſualties, Self-murder amounts to 445, and Murdered to 135.

THE

The Diſeaſes, Caſualties and total Deaths, by the London Bills during fifteen years, beginning from 1727, and ending with 1742.

Head mould ſhot, and Water in the Head	1839	Rheumatiſm	349	Riſing of the Lights	320
Convulſions	119095	Cholick, Gripes, and twiſting of the Guts	5126	Spleen and Vapours	33
Teeth	11959	Worms	222	Miſcarriage	56
Thruſh	1294	Bloody-flux	202	Child-bed	3644
Cough and Hooping Cough	1570	Vomiting and Looſeneſs	339	Evil	494
Rickets	1171	Bleeding	60	Leproſy	74
Small-pox	30870	Diabetes	27	French-pox	1743
Meaſles	3108	Apoplexy	3213	Scurvy	24
Ague	148	Lethargy	125	Raſh	51
Fever, malignant Fever, ſpotted, ſcarlet and purples	61527	Palſy	564	Scald-head	22
Conſumptions	63077	Head-ach	14	Itch	34
Aſthma and Tiſſick	9433	Lunatic	590	Inflammation	452
Pleuriſy	842	Falling ſickneſs	9	St. Anthony's Fire	42
Quinſey	255	Dropſy and Tympany	15896	Impoſthume	397
Sore-throat	8	Jaundice	2009	Mortification	3359
		Livergrown	98	Cancer	821
		Gravel, ſtone, & ſtrangury	770	Canker	161
		Gout	743	Sores and Ulcers	460
		Stoppage of the ſtomach	2751	Fiſtula	110
				Burſten and Ruptures	283
				Swelling	37

Casualties in the above period.

Self-murder	749	Scalded	38	Overlaid	1392
Killed by falls and other accidents	729	Smother'd and Suffocated	40	Died for want and ſtarved	89
Fractur'd ſkull	30	Burnt	69	Exceſſive drinking	658
Broken limbs	83	Bit by mad dogs and cats	10	Surfeits	61
Drowned	1430	Poiſoned	7	Found Dead	696
Murdered	150	Frighted	7		
Stabbed	5				

Abortives and ſtill-born 9067. Aged 20985.

THE Diſeaſes, Caſualties and total Deaths, by the London bills of mortality during fifteen years, beginning from 1743, and ending with 1758.

Head mould ſhot -	1034	Cholick, Gripes, and Twiſting of the Guts	1647	Stoppage of the ſtomach	565
Convulſions ——	87295	Worms -	125	Riſing of the Lights -	41
Teeth -	14862	Bloody flux	118	Miſcarriage -	55
Thruſh - -	1555	Flux -	294	Childbed -	2846
Cough and Hooping-cough - -	2193	Vomiting, & Looſeneſs	166	Evil —	221
Rickets - -	292	Bleeding -	72	Leproſy -	29
Small-pox	29042	Diabetes —	13	French-pox	1010
Meaſles -	2483	Apoplexy & ſuddenly,	3279	Scurvy - -	52
Ague -	103	Lethargy -	103	Raſh - -	52
Fever malignant Fever, ſcarlet and purples	48241	Palſy ——	986	Itch ——	41
Conſumptions -	63041	Lunatics -	1054	Inflammation	859
Aſthma and Tiſſick	6236	Dropſy - -	14301	St. Anthony's Fire -	45
Pleuriſy -	459	Tympany -	31	Impoſthume	251
Quinſey -	221	Liver-grown	25	Mortification	5309
Sore-throat	74	Jaundice -	1831	Cancer -	989
Rheumatiſm	194	Gravel, ſtone and ſtrangury -	412	Canker -	76
		Gout ——	814	Sores and Ulcers ——	278
				Fiſtula ——	91
				Burſten and Ruptures	190
				Swelling -	52

CASUALTIES in the above period.

Self-murder	581	Scalded —	49	Exceſſive drinking	280
Killed by falls & other accidents -	857	Suffocated -	44	Surfeits ——	37
Broken limbs	113	Burnt -	139	Starved ——	78
Drowned -	1578	Bit by mad dogs -	17	Found Dead	457
Murdered -	76	Poiſoned -	27	Executed ——	
Stabbed -	12	Frighted -	17		
		Overlaid -	563		

Abortives and ſtill born 8378. Aged 26335.

THE

The Diſeaſes, Caſualties and total Deaths, by the London Bills of Mortality during fifteen years, beginning from 1758, and ending at 1773.

Head mould ſhot, and water in the Head	331	Quinſey -	170	Gout -	976
Convulſions	88975	Sore-throat	168	Stoppage of the ſtomach	168
Teeth -	12115	Rheumatiſm	131	Riſing of the Lights	15
Thruſh -	1081	Choſick, Gripes, & twiſting of the Guts	786	Miſcarriage	49
Cough and Hooping Cough	4149	Worms -	63	Child-bed	3330
Rickets —	118	Bloody-flux	99	Evil —	172
Small-pox	35708	Flux -	340	Leproſy -	25
Meaſles -	3657	Vomiting & Looſeneſs	134	French-pox	1038
Swine and Chicken-pox	13	Bleeding -	101	Raſh —	39
Ague —	112	Diabetes -	17	Scurvy —	42
[illegible] Fever, Malignant Fever, Spot-Fever, and Purples	48757	Apoplexy & Suddenly	3343	Itch —	11
Conſumptions -	66550	Palſy —	994	Scald-head	13
Aſthma and Tiſick -	6476	Lethargy -	83	Inflammation	1353
Pleuriſy -	359	Lunatics -	1135	St. Anthony's Fire -	81
		Head-ach -	17	Impoſthume	86
		Grief —	82	Mortification	3027
		Dropſy -	13802	Cancer -	670
		Liver-grown	16	Canker -	56
		Jaundice -	2001	Sores & Ulcers	242
		Gravel, ſtone & ſtrangury	420	Fiſtula -	128
				Burſten and Ruptures -	145
				Swelling -	37

Casualties in the above period.

Self-murder	518	Stabbed -	12	Suffocated	65
Killed by falls and other accidents	1011	Scalded -	39	Exceſſive drinking	78
Broken limbs	31	Bruiſed -	35	Surfeits -	30
Drowned	1708	Burnt -	116	Starved -	64
Murdered	73	Bit by mad dogs	5	Found Dead	131
		Poiſoned -	8	Executed -	—
		Overlaid -	119		

Abortives and ſtill-born 10580. Aged 22843.

Con-

Convulsions form a dreary catalogue of aſtoniſhing magnitude in the funerals. Convulſions and Teething are terms too indefinite. Every infant diſeaſe, not immediately obvious to the ſenſes, is thruſt into thoſe two articles by the ignorant ſearchers. Infants in cutting teeth often die convulſed; and from diſeaſes of their ſtomach and inteſtines, which are extremely irritable, convulſions frequently enſue. If we conſider the term ſcientifically, convulſions in numerous caſes convey no more intelligence of the diſeaſe, than if they had ſaid the child died from want of breath. Chriſoms and infants (who die in the firſt month after birth) ſince the year 1726, are intirely left out of the bills, and are now ingulphed in convulſions.

By comparing the abſolute number of deaths ſet down to Convulſions and Teething, we cannot by that alone determine, with any preciſion, on their augmentation or decreaſe for if more are born, more neceſſarily ſhould be expected to die in infancy. In the ſecond table, the total aggregate births, during fifteen years, are 238965, and in the third table, 2195:2; ſo that the third has fewer births than the ſecond by twenty-eight thouſand, and convulſions and teething in the third

third are alſo fewer by no leſs than thirty thouſand. What is ſtill more ſingular, the uſe of ſpirituous liquors and gin, prevailed moſt in London in 1750 and 51, the middle of the third table or period, as can eaſily be proved by the Exciſe books. In the fourth table, the total births are more numerous than the third, by twenty three thouſand, but convulſions and teething in each are nearly on an equality: conſequently in the laſt thirty years preceding 1763, there is a gradual decreaſe of mortality by thoſe two diſeaſes.

WHETHER the increaſed conſumption of ſpirituous productions, from our Weſt India Iſlands and other countries, and ſwallowed undiluted by many of our laborious ranks of ſuckling mothers or nurſes, has operated to the great extent uſually imagined, in augmenting infant mortality and convulſions, may on other accounts be doubted. The French, Italians and Spaniards, both men and women, are remarkably ſober nations, yet upon due examination, infant deaths in Paris, Rome, or Madrid, would probably be found not far inferior in proportion to their numbers in London. Tea in this country at preſent is an article not merely of luxury, but of ordinary diet; more alſo of that malt liquor, called

porter,

porter is ingurgitated in London: has the general propenſity for theſe two articles no effect in diminiſhing dram drinking and convulſions? I lament and acknowledge the indecency and inhumanity of the practice: my meaning is only to repreſent it as an evil, vaſtly ſubordinate in its noxious effects to the poiſonous atmoſphere of cities.

ANOTHER circumſtance overlooked, ſo far as I know by the different calculators and critics on the ſubject of infant diſeaſes in London is this: Cholick and Gripes of the guts in the firſt table, amount to 12185: in the ſecond table they decreaſe above one half of that number; in the third table they dwindle to 1647; and in the fourth table to 786. What is underſtood by this complaint, gripes of the guts; is it dyſentery? Bloody-flux we obſerve, makes a ſeparate article in the bills. Are the two diſeaſes confounded together in the ſearchers reports? May we not ſuppoſe, that ſeveral infant diſeaſes and deaths were formerly crowded into cholicks and gripes? I am aware that in reply it will be ſaid, that drains, ſewers, drier lodgings, leſs damp, and change in diet, have diminiſhed dyſenteric diſeaſes in this city; that Dr. Sydenham likewiſe deſcribes an autumnal dyſentery

annually, prevailing in London, and about two months in duration, during the years 1670, 71 and 72: ſtill I ſuſpect that a number of infant deaths have been crammed into this article; for going back into the bills of the laſt century, the deaths under this title are enormouſly great: proceding backwards from 1700 to 1685, in fifteen years, gripes of the guts amount to 28226, and from 1685 back to 1670, fifteen years alſo, to 41573. In each of theſe laſt intervals too, bloody-flux, ſcowering, and flux make ſeparate titles, and amount in thirty years to 1699, and cholick and wind to 2374. Now we know that acidities in the ſtomach and griping of the guts are very frequent and tormenting diſeaſes of infants, from which they often die convulſed. I cannot think that dyſentery alone deſtroyed altogether ſo many in London; and if my ſuſpicions are well founded, infant mortality in the two laſt tables or periods, whether from gripes or convulſions, will comparatively ſink ſtill lower: it will alſo detract from the oſtenſible magnitude of convulſions in the preſent century, in which article many deaths formerly laid to gripes in the guts, are probably ſwallowed up, and have deceived calculators.

How many of the mortal Thruſh caſes affected infants, and adults? In all probability, infants were the greateſt ſufferers. In ſome rainy years, and in marſhy countries during a wet ſummer this diſeaſe is more epidemical and frequent: when of a malignant ſort, numerous round ulcers cover the tongue, and line the mouth and inteſtines, terminating in ſucceſſive layers of tenacious ſhining cruſts.

Cough and hooping-cough have increaſed; is the Croup added to chin-cough? are any other different pulmonary complaints, under the title of cough, intermixed with this teazing diſeaſe, ſo peculiar to infancy and childhood? luckily, like ſmall-pox and meaſles, it attacks the ſame perſon but once in life.

Rickets are on the decline: in the laſt table of fifteen years, they ſhrink into 118, whereas from 1670 to 1701, ricketty deaths amounted to 11415. Does not this in one reſpect indicate more maternal attention to the ſuckling and rearing of infants?

The deaths from Meaſles are generally to thoſe of ſmall-pox, in the ratio of 1 to 10, 11, and 12. Sydenham long ago obſerved, that the meaſles if ſkilfully treated, are attended with little danger: I think he ſhould have added immediate danger; for in their future conſequences, meaſles, eſpecially

eſpecially in cities, are not without hazard.

VERY few now die of Ague in London: towns in general are leſs harraſſed with this diſeaſe than country places. Pringle remarks, that during the campaigns of the Britiſh troops in thoſe marſhy countries of Flanders and Holland, where agues and remittent fevers from moiſt and putrid vapours are ſo frequent, the ſoldiers quartered in towns kept freer from thoſe diſeaſes, than the troops detached in country cantonments: the fires, ſewers, drains, and paved ſtreets, prevented an exuberance of moiſture; and if the men ſlept in the upper part of the houſe, they were more ſecure from ſickneſs.

FROM 1699, Fever, Malignant, Scarlet, Spotted fevers and Purples, are all promiſcuouſly included in one title; formerly they were kept more diſtinct. It is now impoſſible from this complex title to determine the ſpecific nature or genus of thoſe febrile diſeaſes. In the preceding century, ague and fever were joined together, and ſpotted fever and purples in a ſeparate parcel: their proportion in thirty years is as follows: ague and fever 87645: ſpotted fever and purples 5744. In the third and fourth tables of the preſent century, the torrent of deaths from malignant ſpotted fe-

vers, &c. ſeems to be ſtemmed: for this, many reaſons might be aſſigned, but the inveſtigation would lead into too wide a field; I muſt then treat of contagion, of jail infection, I ſhould ſpeak of bark, antimonials, perhaps of bliſters, and of other improvements, either tending to prevent ſuch diſeaſes, or to mitigate their ravages. It is now diſcovered and well known, that jail infection, or even that of Small-pox, is annihilated by fire and ſmoak, confined a proper length of time; the heat of a baker's oven continued twelve hours, extinguiſhes theſe noxious poiſons when concentrated in woollen or other porous materials.

Consumptions make an awful appearance in the funerals: how many of the true pulmonary conſumption are included in this catalogue, is difficult to gueſs; but from the concurrent teſtimony of phyſicians and of experience, we may affirm a very conſiderable number: there are few families, in this kingdom eſpecially, whom it has not one time or other plunged into tears and diſtreſs, and deprived of friends and relations, multitudes of them blaſted at the entrance into, or in the meridian of puberty and beauty. Conſumptions and coughs are terms ſo general, that there is room to mix with them a promiſcuous aſſemblage

aſſemblage of diſeaſes. Every hectic waſting and emaciation of the body from infancy to old age, the conſequence of Small-pox and Meaſles, and of various febrile or chronical diſtempers, are without doubt indiſcriminately heaped into conſumptions. Excluſive of hereditary conſtitution, neglected colds, ſcrophulous lungs, narrow cheſt, ſanguine plethora, and hemoptoe, or inflammations of the breaſt ill cured, which give birth moſt generally to the true pulmonary phthiſis, various complaints of the fair ſex, originating from obſtructions, or a contrary fault, terminate frequently in this diſeaſe. Coughs, emaciation and other conſumptive ſymptoms, as they are called, do not by any means always ſhow a diſeaſe ſituated in the breaſt; they may indicate a waſting, drooping habit: Sydenham obſerved, that ſuch ſymptoms often follow tedious fevers, where in ſuch caſes, he found wine and generous diet the beſt remedies. Has not the increaſe of law and mercantile tranſactions, and conſequently of young writing clerks, added to the conſumptive liſt? Strong whale-bone ſtays, and tight-lacing are juſtly reprehended by writers on the phthiſis.

CATARRH and influenza are irregular aſſailants, and do not form a diſtinct article in the bills. No other epidemick ſpreads ſo

ſudden

ſudden and univerſally over a kingdom: in 1743, it paſſed over Europe. In no other epidemick do ſo few die in proportion to the number of infected. Its continuance is generally ſhort, and what inconſiderable depredations it commits, are principally upon declining, conſumptive and aſthmatic perſons, upon worn out conſtitutions, and thoſe whoſe lungs are nearly conſumed. In ſuch forlorn complaints, catarrh haſtens the final diſſolution ſooner than it would otherwiſe have happened. Perſons too, recovering from agues and other fevers, upon catching influenza, have often ſuffered relapſes.

Asthma and Tiſſick form rather a confuſed combination of diſeaſes; formerly it was Conſumption and Tiſſick, without any mention of aſthma. Whether the whole are true aſthmatick caſes accumulated in this formidable group, I cannot undertake to unravel.

Simple inflammatory Quinſey, if treated with any moderate degree of ſkill, deprives very few of life: are any caſes of Putrid ſore throat confounded with it; I imagine, that more periſh by the latter diſeaſe, than are recorded under the title of ſore throat: perhaps they are thrown into malignant, ſcarlet and ſpotted fever.

Rheu-

RHEUMATISM may be ſuppoſed to comprehend every ſpecies of this diſeaſe, whether acute or chronic; it is rather a painful anguiſh than dangerous to life.

I HAVE already ventured a few new conjectures upon that obſcure medley of diſeaſes, called cholick, gripes and twiſting of the guts. The devaſtation under that title appears in the two laſt tables very inconſiderable; but what ſhares ſhould be apportioned to children and adults, to dyſentery, to the true Ileus or inflammation of the bowels, excited by volvulus of the inteſtines, and by other obſtructions in that canal, I confeſs my inability to ſolve.

WORMS infeſt children more than grown-up perſons; in all the tables the diſeaſe decreaſes. Is it now ſet down amongſt gripes and cholicks? I am perſuaded that the bills are defective in aſſigning the due ſhare of mortality to worms. In the thirty years preceding the preſent century, the mortality by worms, amounted nearly to fourteen hundred: poſſibly hectic emaciations and conſumptions may now comprehend ſeveral true worm caſes.

VERY few comparatively ſeem to die in London of the Bloody flux, Vomiting, Looſeneſs, or of Bleeding; but I am well ſatisfied that the bills rate deaths from hemorrhage and bleeding, greatly too low. Moſt of the

fatal

fatal hemorrhages or floodings from the uterus in the advanced ſtate of pregnancy, or ſhortly after delivery, I preſume are carried to Childbed and a few to miſcarriages: even from the lungs alone I ſhould have thought hemorrhages more fatal; indeed for the moſt part ſpitting of blood, before the tragical cataſtrophe, terminates in a conſumption.

Diabetes is omitted in the bills until 1684, and in the ſucceding ſixteen years, twenty-ſeven only appear to have died of that diſtemper. I ſuſpect, that formerly the diabetes was thrown into hectics or conſumptions, which is commonly the fatal iſſue of this diſeaſe.

Apoplexy is generally a diſeaſe of mature and old age. From 1671 to 1701, Apoplexy and Suddenly ſtands at 3010, Lethargy at 488, and Megrims or Vertigo now diſcontinued at 45. Many ſudden deaths are alſo thrown in amongſt the truly apoplectic, Apoplexy is uſually ſaid to have increaſed by more immoderate indulgence in ſpirituous liquors; but the four tables of the preſent century do not ſhow any alarming ſurge. Drunkenneſs and beaſtly intoxication is not in this iſland, an increaſing vice of the high and middle ranks of life: beſides, Apoplexy in many inſtances is brought on by plethora, either from habitual evacuations ſuppreſſed, or from ſloth,

indulgence

ndulgence and luxurious living, by intenſe contemplation and ſtudy, and by local diſorders of the head: corpulency, a ſhort neck, gluttony, and paſſions of mind will act either as predisposing or exciting cauſes of a fit: the ſame event has followed ſcorching inſolation, and expoſure to the confined vapour of charcoal. Lethargy and Palſy are nearly allied to apoplexy: ſtrokes of apoplexy not immediately fatal, too often terminate in palſy, which in the three laſt tables is increaſed. From 1671 to 1701, the mortality by palſy is but ſix hundred and thirty. Probably the mechanical arts, where either lead or quickſilver are employed, whoſe fumes are ſo poiſonous to the human nerves, may have ſome ſhare in the riſe of paralytic diſeaſes. A ſpecies of palſy called the Barbiers, often occurs on the Malabar coaſt of India.

LUNATICK deaths, it is painful to obſerve, are more than doubled in the two laſt tables. Such diſmal objects muſt be numerous in London, when ſo many are reported in the regiſters of mortality. The diſeaſe inſanity of itſelf, does not neceſſarily endanger life, at leaſt not immediately; numbers ſurvive in that mortifying condition to an old age. We ſhould reflect that the largeſt Lunatick Hoſpital in Europe, ſtands in this metropolis, excluſive of ſome private mad houſes, in the

ſuburbs; and that mad perſons are ſent from various remote parts of the kingdom, to receptacles of confinement in London, at a diſtance from their friends. Perhaps too, thoſe whom nature originally, or diſeaſe branded as ideots, are enrolled amongſt the true melancholick and maniac lunaticks. In the preceding century, diſtracted and lunatick was the joint title in the bills, the former is now left out. The coroner's inqueſt generally returns ſuicides as lunaticks, after however reciting the manner of their death: the ſearchers and the bills of mortality have invariably ranged lunatick and ſelf-murder, under two diſtinct heads. From 1671 to 1701, diſtracted and lunatick are in the bills five hundred and fifty-four.

Deaths by Epilepſy and falling ſickneſs, from 1670 to 1700, amount only to thirty-five, and in the firſt forty-five years of the preſent century, are dwindled to thirteen: of late years the title and diſeaſe is totally excluded. Is this horrible convulſion no more inimical to the ſprings of life; is it merely a lingering torture; or any epileptic deaths confounded with lunatick, as both are conſiderably under the lunar influence? Violent and long continued epileptic fits often end in idiotiſm or lunacy. In infants and children, epilepſy when mortal is probably caſt into convulſions. The Jews could only aſcribe epilepſy and demoniac madneſs to the malicious rancour of an infernal devil.

The

The locked jaw is a ſingular ſpaſm which ſeldom happens in this country, but in the ſultry tropical regions after amputations and wounds it ſuddenly deſtroys numbers.

Dropsy ſtalks with obſtinate deſolation throughout all the tables: this too, like conſumptions is the final termination of many acute and chronic diſtempers, and of broken conſtitutions, beſides many internal derangements which I do not here propoſe to expatiate upon. Tympany is a very rare diſeaſe compared to the former. From 1671 to 1701, the mortality by dropſy and tympany is twenty-three thouſand, three hundred and ſixty-ſix, and liver grown four hundred and eighty-eight. The principal, and moſt general collections of water, called dropſies are, that in the breaſt, that in the abdomen, that in the external cellular membrane the anaſarcous: what deadly ſhare, each had ſingly, or the ſeveral "genera" in conjunction, is concealed in profound obſcurity.

From 1671 to 1701, the mortality by Jaundice is two thouſand, one hundred and ſixty-nine: if the bills therefore can be depended upon, the diſeaſe increaſes. Jaundice is a frequent conſequence of diſeaſes in the liver, of obſtinate agues, and remittent fevers, and particularly of ſtones, ſand, or other obſtructions in the biliary ducts.

Deaths from Stone, Calculus, and Strangury are diminiſhed, is this to be aſcribed to more ſucceſsful methods of performing the operation of lithotomy, or to a decreaſe of calculous caſes? Or as ſtrangury is included in the ſame title, are diſeaſes and obſtructions of the urethra from venereal gleets, or other cauſes more ſkilfully relieved by modern bougies? With reſpect to lithontriptic medicines, we ſeem to have approached as near the diſcovery of diſſolvents, as the chymiſts have to the philoſophers ſtone. In the preceding century, the bills mark the mortality alternately under theſe fluctuating titles, cut of the ſtone and ſtone, ſtone and ſtrangury, ſtone, cut of the ſtone, gravel and ſtone, and generally ſtrangury in a ſeparate title. From 1670 to 1701, the deaths under theſe different heads are one thouſand, ſeven hundred and ninety-ſix; they may alſo be ſuppoſed to comprize all fatal nephritic paroxiſms, and inflammations of the kidneys, ureters, and bladder. An intelligent phyſician of Liverpool, Dr. Dobſon lately collected a liſt of perſons cut for the ſtone in different county hoſpitals through England: out of one hundred and ninety-two thouſand, three hundred and ninety-four ſick of various diſeaſes, medical and ſurgical, four hundred and thirty underwent the operation of lithotomy. When we revolve in our mind, that the majority of ſtone caſes, are perſons advanced

beyond

beyond child-hood, and upon the number of diſeaſed and ſick compared to ſtone complaints, we may be ſatisfied that it falls to the lot of an inconſiderable portion throughout the kingdom, annually to undergo this operation. Upon this general ſurvey it was not found that the counties where cyder is drank in great abundance, had more calculous complaints than other counties, where they ſeldom taſte of this liquor. We may likewiſe conclude, that moſt of thoſe who enter into hoſpitals, are of the lower and indigent orders, many of whom perhaps never drank a ſingle quart of wine.

The Gout rather gains ſtrength, and for this ſmall addition we may find ſufficient cauſe in the growth of indolence and luxurious living, in the increaſe of hereditary infirmities, and in ſome degree of literati, of ſtudious ſedentary profeſſions, or of men immerged in other mental lucubrations. It is almoſt ſuperfluous to remark, that the regular paroxiſms of this diſeaſe, in its infancy, are very ſeldom attended with danger, unleſs unſkilfully treated: the irregular aſſaults chiefly of chronic gout ſtorming ſome of the internal and important organs, can be ſuppoſed to make up the funeral catalogue. In the laſt century, gout was confounded with ſciatica.

Stoppage of the ſtomach ſo far as I know, indicates no ſpecific diſeaſe, but is a

ſymptom

ſymptom of many: it is a vulgar name ſometimes for indigeſtion and rejection of food. I enquired from two of the ſearchers what they meant by this phraſe, but they honeſtly confeſſed that they knew nothing of the matter. It is not what medical men call "dyſphagia" or difficulty in ſwallowing, a rare diſeaſe ariſing from different obſtructions in the æſophagus, and ſometimes from ſpaſmodic, or from paralytic affections of that tube. In the laſt thirty years of the preceding century, Stoppage of the ſtomach is rated at the amazing number of twelve thouſand and forty-ſix, and Riſing of the lights in the ſame interval, at three thouſand, eight hundred and forty. The mortality in the laſt or fourth table compared to the former, is not 1-70th part ſo great. It would baffle the ingenuity of an antiquarian to decypher the true import of theſe two terms; ſevere ſickneſs, or the word abracadabra, would be full as intelligible: what proportion of infants, of adults, and of the two ſexes, are crowded into theſe two immethodical articles? are any caſes of hyſtericks comprehended under either of them; or is this teazing convulſion, peculiar to the fair ſex, rarely attended with any immediate danger to life?

FROM twenty-four years of the London bills, and from ſeveral country regiſters in England

England and Germany, Dr. Short calculates, that upon an average, one of ſixty women die in child-bed; others upon better foundation, make the proportion three of two hundred. Every perſon may ſatisfy himſelf reſpecting the validity of this eſtimation, by comparing the deaths in child-bed, and in miſcarriages throughout the four tables, with the births and abortives in the ſame interval; making allowances at the ſame time for greater omiſſions of births and miſcarriages in the publick regiſters. Another circumſtance to be taken into conſideration is, that amongſt ſuch a multitude of women, a ſmall part muſt be ſuppoſed to have died annually, independent of the pregnant ſtate and its dangers. What were the ſeveral diſeaſes before and after delivery, which occaſioned this mortality amongſt the female ſex, and how many died from mere difficulty in labour, we cannot learn from the bills. From difficult and laborious births, where inſtruments are directed, or at all required, I venture to aſſert, a very diminutive part of this lot periſhed: this is conſonant to all the beſt modern accoucheur treatiſes, in which inſtruments and rude violence are more and more diſcountenanced. Profuſe floodings may precede, accompany, or follow the efforts of labour: milk fevers, and ſometimes inflammations

of

of the womb, or other dangerous diſeaſes, ſuch as miliary fever; and in rare inſtances a malignant infectious fever, may ſucceed delivery. Particular years alſo appear to be more fatal to breeding women than others. "Fœtuſes" in their delicate rudiments in the womb, are ſometimes like vegetable bloſſoms eaſily blighted: early miſcarriages from the ſecond to the fourth or fifth month, though not recorded in the public regiſters, are much more numerous than in the latter months of pregnancy, but happily they are infinitely leſs hazardous to women: the mature Abortions and Still-born are alone thought deſerving of burial, or noticed in the bills. It is probable, that a part of the ſtill-born had arrived at their full time and growth, and periſhed during tedious labours, or by the raſh practice of midwives.

BRAZILIAN women are ſaid in Smollet's collection of Voyages to be very fruitful, and to have ſo eaſy labours, that immediately after delivery the woman riſes up, walks to a neighbouring river, and there purifies herſelf; the huſband in the mean time goes to bed in her place, and is nurſed with as great tenderneſs, during the firſt twenty-four hours, as our European women when lying in. By Mr. Brydone's deſcription of the Sicilian women, they ſuffer very little in delivery, and

next day the eſtabliſhed etiquette, which in England would be conſidered as very indelicate, is to receive viſits in their bed-chamber, from all their male and female acquaintances.

I SHOULD rejoice to ſee a few ſchools eſtabliſhed for the inſtruction of female midwives, where in one years time they might be taught all the neceſſary rudiments of the profeſſion. In almoſt every clumſy mechanical art, it is thought indiſpenſibly requiſite to be initiated by a regular apprenticeſhip, and it is the extreme of abſurdity to ſuppoſe, that the accoucheur art can be learned by inſpiration. Nature undoubtedly is the principal operator and phyſician in labour but ſhe may want aſſiſtance, or by ignorance, is much oftener unneceſſarily diſturbed and exhauſted. Child-bed fevers are frequently kindled by officiouſly haraſſing, or over heating women with cordials, and by ſtewing them in cloſe rooms, where they are ſuffocated in foul effluvia.

THE Evil or Scrophula apparently decreaſes thoughout the four tables: I believe this diſeaſe often terminates fatally in conſumptions. From 1671 to 1701, deaths by the evil amounted to two thouſand, two hundred and ſixty-one. Has the more general uſe of vegetables in diet any effect in repreſſing this grandular and hereditary depravity?

LEPROSY is now almoſt eradicated and worn out. In the thirty years preceding the preſent century, the mortality by this diſeaſe amounts only to thirty-three. During and after the Cruſades of the twelfth century, Europe was deluged with this filthy judaical ſcurf imported from Paleſtine: lazaretto's for the confinement of the unclean, abounded in ſeveral kingdoms, in France alone ſtood two thouſand. At preſent, in the cold Northern Iſland, Iceland, a ſort of lepra arabum is congenial to the natives from their diet, climate and manner of life.

IT is not quite three hundred years ſince the firſt diſcovery of America, and the importation of the Venereal diſeaſe into the old world. Before the diſcovery of the Indian remedy the decoction of guaiacum, and a few years ſtill later, of mercurial unction, Europe was alarmed with univerſal conſternation at the hoſtile inroads of this diſeaſe: multitudes periſhed under the corroding ulcers, preſenting before death horrid ſpectacles of cadaverous corruption and deformity.

FRENCH pox is even at preſent more baneful, at leaſt to London, than medical men acquainted with the infallible remedy and mode of cure would ſuſpect. For this, two probable reaſons may be alledged: the ſwarms of ignorant vermin called Quacks, who borough themſelves

themſelves in all large cities, and the increaſing multitude of common proſtitutes, who diſſeminate the infection, many of whom from negligence, poverty, or application to thoſe inſidious aſſaſſins, diſguiſed under the maſk of M. D's, and ſurgeons, periſh miſerable victims to this diſeaſe. Credulity has made murder a profitable traffick, and his Majeſty's letters patent, proſtituted by his ſervants to common ſale, give an additional encouragement to the venders of every traſh and poiſon; they lay their ſnares in every thoroughfare, and kill the unwary with as much indifference, as undertakers afterwards carry them to the church yard.

Would it not be poſſible to cut up this American poiſon by the roots through the kingdom? Some poſſibly may conſider it in the light of a penal ſtatute againſt vice and debauchery, but I am not ſatisfied that morality could be in the leaſt endangered by its radical extermination. Should this not be found practicable or adviſeable, would not two diſtinct hoſpitals, ſufficiently large to contain male and female venereal poor, reſcue numbers from the artifices of impoſtors, and from ruinous deſtruction? Separate apartments might be laid out for others, not altogether in indigent circumſtances, and who, upon entrance

ſhould pay down a ſmall ſum for their maintenance and cure. Many of the young laborious claſs (I ſpeak of the female ſex) not yet hardened in profligacy, are plunged into irretrievable diſtreſs, in conſequence of catching this diſtemper. Many conſtitutions of our diſſolute young men, might probably by this means be protected and preſerved from venereal depredation. The numbers who died in London, in the thirty years preceding the preſent century, of French-pox, were two thouſand, three hundred and ſixty.

TRUE Scurvy is ſeldom ever mentioned by any writer, before the long voyages firſt begun three centuries ago by the moderns; that is, on the diſcovery of the paſſage to Aſia, by the Cape of Good-Hope, and the diſcovery of America: then, in conſequence of living long on ſalted and groſs diet, and the want of freſh vegetables or fruits, this diſeaſe made ſevere havock amongſt naval ſquadrons. The ancient navigators who ſeldom ventured out of ſight of land or capes, and who probably were not under the neceſſity of ſubſiſting long on ſalted food, do not appear to have ſuffered by, nor even to have known the diſeaſe. Hippocrates is by many ſuppoſed ſlightly to allude

allude to ſcurvy under the name of large ſpleen, accompanied alſo with putrid ſpungy gums and offenſive breath: it is ſtill more diſtinctly noted by Strabo and Pliny, as affecting Cæſar's army when encamped on the banks of the Rhine.

THROUGH all the Northern kingdoms of Europe, and particularly in Holland, amongſt thoſe who fed chiefly on ſalted fiſh and groſs diet, who drank bad waters and dwelt either in moraſſes or near the ſea coaſts, ſcurvy in the two laſt centuries made cruel ravages. Several armies and beſieged garriſons in Germany, intercluded from freſh vegetables were devoured by ſcurvy: numbers of the new ſettlers in the Northern colonies of America, and at Newfoundland were cut off by this diſeaſe. The North Americans were taught by the Baltickers and Swedes, the ſovereign benefit of drinking ſpruce beer, which is an excellent ſubſtitute when freſh vegetables cannot be procured: the induſtrious Dutch made drains and canals to carry off water, and truſted the reſt of the cure or prevention to ſour crout: in ſome of the Northern kingdoms of the continent acidulated bread, and a ſour drink uſed by the Ruſſians, powerfully reſiſt ſcurvy. By theſe and other precautions, this foe is now much leſs formidable on land; but

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ſea, no other is ſo inimical to navigators: on that element it is yet the ſea monſter and tyrant: the effectual antidotes are now ſo well known, that I dare to maintain multitudes of the lives loſt by this diſeaſe at ſea, are ſacrificed to groſs negligence, or to impolick and inhuman œconomy.

FROM 1671 to 1686, the deaths by Scurvy are in the London bills nine thouſand, four hundred and fifty-one, and in the ſucceeding fifteen years, five hundred and ſixty-nine only. It is common I know for perſons ignorant of medicine, often to call various cutaneous foulneſs of the ſkin, by the name of ſcurvy. Whether all thoſe therefore died of the genuine ſcurvy, I cannot decide. Another ſuſpicion of ſome weight with me, is this: the theory of the laſt century imputed many diſeaſes to this ſpecific "cacoethes" as they called it; perhaps this theory and prevalent opinion may in ſome degree have influenced the ſearchers report. The ſcurvy, the liver and the nerves, have been convenient hiding places for pompous ignorance. In the preſent century, ſcurvy has deſtroyed very few in London, and even of this ſmall number ſet down in the bills, the diſeaſe in ſeveral may have been bred at ſea: in London, the lodg-

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ings are now dry; animal meat is eat freſh; vegetables, though perhaps not univerſally conſumed in ſufficient qnantity, are certainly in great abundance; beer, fermented liquors and tea are drank by all ranks: theſe in conjunction powerfully reſiſt the tendency to ſcorbutick corruption.

What proportion of Inflammations, Impoſthumes, and Mortifications, were external or internal, is left in the dark by the bills.

SHALL we never be ſo fortunate as to diſcover any remedy for that deplorable and excruciating diſeaſe, the Cancer, which ſets medicine, and too often that dreadful alternative of ſurgery, the knife, at defiance? Shall we never be able to blunt this cauſtick poiſon in the body, as certainly and ſucceſsfully as we do the ſcurvy or the venereal diſeaſe? The female ſex are moſt annoyed by this venomous ſcorpion, particularly in their breaſts, and not unfrequently in the uterus.

BURSTEN and Ruptures decreaſe throughout all the tables. From 1671 to 1701, they had ſwelled to nine hundred and ſeventeen. Are we indebted to modern ſteel truſſes for having leſſened the number of victims to this diſeaſe? Perhaps too, though in a diminutive degree, to more ſkilful methods in relieving deſperate inteſtinal protruſions.

SELF-murder, a peculiar gloomy paſſion and propenſity of the Engliſh, as they allege

on

on the continent, has increaſed in the preſent century, and ſurpaſſes the number of thoſe ſacrificed at that infamous human ſlaughter-houſe, Tyburn. From 1671 to 1701, the bills have rated thoſe who hanged, and made away with themſelves, at five hundred and fifty-ſix: they are now doubled. In a treatiſe publiſhed not many years ago by Sir S. Theodore Janſen, he eſtimated the wholeſale carnage of human fleſh at Tyburn, at ſix hundred and ſeventy eight, in the ſpace of twenty-three years. It is rare for either of thoſe violent and ſhocking diſſolutions to happen before puberty.

The numbers Drowned from 1671 to 1701, were two thouſand, one hundred and eighty-two. Drowned perſons formerly were often ſuſpended by the legs, or placed in a prone poſture, with the face and head downwards, and rolled over a caſk or cylinder, from an erroneous idea, that the ſtomach and lungs were filled with water. Theſe rude methods tended to load the head with blood, and anſwered no good purpoſe.

The moſt important and effectual directions on ſuch ſudden accidents, firſt publiſhed and inculcated by the Dutch, and lately in imitation of them by the Humane Society in London, are, inſtantaneouſly to ſtrip off all the

the drowned perſons cloathes, to wipe him dry, and to place him in a heated bed between ſeveral layers of warm blankets, uſing afterwards inceſſant friction with heated flannels alternately on the breaſt, back, belly, and over all the extremities: Volatile Salts, or in defect of them any other ſtrong ſtimulants, ſhould be frequently applied to the noſe and temples; bottles of warm water or heated bricks repeatedly renewed and laid to the ſoles of the feet; air blown in at the mouth or noſtrils to inflate the lungs; heated fumes of tobacco, if convenient, may be once or twice blown up the anus, and blood if practicable drawn from the arm, but with caution and not too laviſhly. The attendants are to perſevere without intermiſſion, in the labour of friction and applying heat, and if the drowned perſon has not lain too long under water, they are not to deſpair of reviving the circulation and the vital powers, though to all appearance extinct, until after at leaſt two or three hours ineffectual exertions. Many who had lain under water a quarter, a half, a few three quarters, and as they report even a full hour, were by this means happily reſpited from the grave.

THE Murdered from 1671 to 1701, were four hundred and thirty-two. It is with pleaſure that, in the laſt tables, we behold this dreadful crime on the decreaſe. Are we indebted for this in ſome degree to the ſtreets and ſuburbs being better lighted and watched, and to the former being widened and better paved? Or are the lower claſs alſo now leſs barbarous? At preſent our robberies are ſeldom accompanied with cruelty. That modern and magnificent eſtabliſhment the Foundling Hoſpital, for the reception of young deſerted infants, has perhaps reſcued many infants from violent deaths.

FREQUENT conflagrations, of houſes in London will account for thoſe Burnt.

THE Overlaid are greatly decreaſed: is this owing to more care of nurſes and mothers, or to erroneous reports formerly of the ſearchers reſpecting the cauſe of infant deaths, or to what other cauſe? I confeſs my ignorance.

SURFEITS in the laſt century make an enormous article in the chronicle of deaths: from 1670 to 1690, they amount annually to three and ſometimes to four hundred: in the laſt table of fifteen years, they ſink down

to

to thirty; yet good eating and gormandizing are certainly not worn out of fashion in this city. Medical men know that surfeits and intemperance are often merely predisposing or occasional causes of diseases; they may on some occasions rouse up latent disorders, or dispose the body to receive noxious impressions from without: the searchers therefore, as I suspect, have formerly made many of their reports from the ostensible cause which they supposed gave birth to the disease and to the mortality. At the same time I am not contending for the delicacy and moderation of our fore-fathers appetites; they were unquestionably in the last century, more carnivorous in their diet, than the present London generation. From frequent surfeits and repletions, and that filthy disease gluttony, I fear that many lives are shortened.

Excessive Drinking is not mentioned in the bills before the year 1700: was it until then included under surfeits, or totally omitted? in the first twenty-seven years, the deaths were one hundred and ninety; but from 1728 to 1743, in fifteen years they amount to six hundred and fifty-eight; in the following fifteen years, they decrease to one hundred and eighty; and in the last

table to ſeventy-eight: yet in that period, when two hundred and eighty died, the conſumption of ſpirituous liquors and gin were then at their heighth in London. Malt liquor I own drank to intemperate exceſs, would effect have the ſame, though leſs ſuddenly and miſchieveouſly.

In this laſt inſtance may we not doubt whether ſo great a change took place in national manners and potations, as to occaſion this ſudden flux and reflux in the mortality by exceſſive drinking. A continued round of intoxication, in its ruinous conſequences, I am convinced ſends infinitely more to their graves than are ſpecified in the laſt tables: theſe, I preſume, are ſo many inſtances merely of precipitate deaths from brutal inebriety. Our libations are become more temperate and decent, as we advance in civilization and refinement: with more rational variety in our employments and entertainments, has not tea alſo contributed its ſhare to the ſobriety of the nation, and partly to expel theſe gothic cuſtoms? The ſouthern nations of Europe, (the Swiſs excepted) the French, Italians, Portugueſe, Spaniards and Turks are all noted for ſobriety; but in ſeveral northern kingdoms of the continent, and perhaps in a contiguous

tiguous iſland, Ireland, many thouſands are deſtroyed by this beaſtly intemperance. Numbers of the North American Indians have been cut off by their unbounded rage for ſtrong ſpirits: a ſavage there would never voluntarily ſtir from the dram bottle. Our barbarous anceſtors the Germans, as deſcribed by the elegant pen of Tacitus, filled up the languid interval of war in the ſavage luxury of diſorderly drinking, feaſting and gaming: after wallowing days and nights in all the extremes of gluttony, and coarſe inebriation, their noiſy feaſts generally terminated in battles and bloodſhed. There are few good things which ſome men do not abuſe: notwithſtanding the impotent interdictions and dull cant of four-bigots or affected writers, mankind, I believe, may without any injury indulge in the moderate uſe of thoſe exhilirating friends, whether extracted from the grape, from the apple, or from malt, provided they are unadulterated.

THOSE ſet down as found Dead, are now much leſs numerous: whether this in ſome degree is to be aſcribed to better regulations reſpecting the poor, or to what other cauſes I leave to the reader to diſcuſs and ſettle.

HEAD-ACH and Grief are two diſeaſes which I have hitherto paſſed over without

any

any remark. The cure or eaſe of the former frequent and tormenting pain appears to me too little attended to medical men. Griefs and the various melancholy or corroding paſſions of mind, eſpecially if too ſtrong and long continued, and unremittingly rivetted upon a ſingle object, though ſlow in operation, are immenſely more fatal than the bills point out; but to treat this ſubject with accuracy, would require a ſeparate diſſertation. To mental ſources originally may be traced many caſes of madneſs and ſelf-murder, many ſtomach, hypochondriacal and nervous diſorders: we ſhould find them in many inſtances weakening and waſting the nervous and muſcular vigour, diſturbing the hours conſecrated to reſt, impairing the appetite and digeſtion, by degrees deranging the other wheels of the human machinery, and at length breaking down the conſtitution.

In large civilized and poliſhed ſocieties, the various groups and orders of mankind, that is thoſe advanced beyond the age of childhood, are kept more or leſs employed by three principal ſpurs, dire neceſſity, avarice and ambition, or from a mixture of theſe incentives to corporeal and mental exertions: a luſt for pleaſure of one kind or other ſeems to

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be a paſſion common to every degree; but in all, there are innumerable ſhades and gradations. The paſſions are more acute, and exert their ſickly tyranny more ſeverely over the middle, and eſpecially the higher ranks of life: from their independent or affluent circumſtances, they are ſometimes cloyed with ſatiety, or preyed upon by liſtleſs inactivity; in other caſes the reſtleſs fervency of the mind, inceſſantly bent upon one purſuit, is often not withdrawn, nor its tide and force diverted and broke by buſtling and providing for immediate neceſſities or moderate luxuries, nor by any other official and active employment. Intenſe application of mind, and deep meditation over books, without any relaxation, from whatever motives, are equally noxious to the ſtomach and nerves, and often give riſe to the hypochondriacal complaint. In all the above mentioned caſes relating to the paſſions, and to ardent contemplation or ſtudy, it muſt be remembered that a ſedentary life will much ſooner give them root and energy; they alſo for the moſt part exerciſe their noxious and malignant ſway after the years of puberty. A licentious and diſſolute exceſs in venereal dalliance is an early and a late paſſion,

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by which numberleſs conſtitutions are injured, and many ruined.

Amongst the wealthy and elevated claſſes, many diſeaſes are engendered from their own vices, intemperance, or indolence: to explore them thoroughly would lead into a prolix diſquiſition: excluſive of the gnawing paſſions, they are entangled with other conſiderations. Thus, indolence, late hours, luxurious living, want of ſufficient exerciſe and ſtudied effeminacy of pampered mortals, will account for many caſes of gout, of hypochondriacal, and hyſterical infirmities, of vapours and female relaxations.

We are not to eſtimate the relative number, frequency or proportion of certain diſeaſes compared to others by the abſolute mortality of each. For inſtance, Apoplexy has killed rather more annually in London than Meaſles, but the latter diſeaſe is infinitely more general and diffuſed amongſt the community, and conſequently leſs dangerous to life. Cancerous and venereal caſes are widely different in the annual number which are afflicted with each, although in the bills, the deaths are nearly upon an equality. This obſervation will apply to a great many other diſeaſes; but I am fearful of ſatiating the reader by

ſuperlative

ſuperlative minuteneſs, and unneceſſary prolixity.

Six hundred thouſand inhabitants within the bills of mortality, Dr. Price conſiders as too large an allotment; but in regard to a curious propoſition I am about to advance, to make the London inhabitants more numerous than what he allows is erring on the ſafe ſide; and enables us to form a convenient numerical radix. If the inhabitants of Great-Britain and Ireland including London, amount to nine millions, and if diſeaſes, deaths and caſualties were equally diffuſed and fatal to the whole community, then in this caſe the London bills would ſerve as a ſcale, or index of mortality to both nations: as many would die *annually* of every diſeaſe and caſualty throughout nine millions, as are cut off in fifteen years in London; becauſe ſix multiplied by fifteen, gives nine millions: but we are ſenſible, that in London infant deaths under five years of age, far exceed thoſe of the country, and the city has proportionally fewer breeders: again in the fenny countries, agues abound more than in the metropolis: with theſe and ſome other exceptions which will occur to medical men, and to gentlemen of reflection, were the mortal diſeaſes of London correctly diſcriminated, ſome diſtant gueſs and probable conjecture might be formed of the annual

proportion deſtroyed by ſimilar afflictions throughout Great-Britain and Ireland. At preſent, medical men muſt deplore the defects and inaccuracy of the bills: the data from them in numerous inſtances are ſo dubious and perplexed, that it is impoſſible to form beyond probable calculations and propoſitions.

BRITISH MUSEUM

FINIS.

APPENDIX

TO THE

FIRST CHAPTER of OBSERVATIONS MEDICAL and POLITICAL, &c. &c. By W. BLACK, M. D.

CONTAINING

The Outlines of a PLAN, *for inſtituting a* DISPENSARY, *in order to diſtribute the Benefits of* INOCULATION *to the Offspring of all the indigent and laborious Orders throughout* London, Weſtminſter, *and* Southwark.

VARIOUS Diſpenſaries, Public Societies, and Hoſpitals, have been wiſely and humanely inſtituted, by the benevolent and affluent in London, to relieve the neceſſitous, who labour under diſeaſes or affliction, and to preſerve the lives of the community: ſuch are thoſe for lying-in women; for perſons drowned; aſylums for the blind, which in a great meaſure might have been prevented by inoculation; a magnificent palace for a few hundred lunatics, and a great many others. If we compare, and it is far from my intention to do it from any invidious purpoſe, the importance of thoſe different inſtitutions, with an Inoculating Diſpenſary, we ſhall find the latter entitled to the firſt conſideration, both in the light of humanity and national policy. For inſtance, on an average, there do not die in one year in London, above two hundred women in childbed, and of all the diſeaſes immediately attendant upon that ſtate; nor are there drowned annually above one hundred; whereas, by the ſmall-pox, including every pariſh and burial-ground, there die annually between two and three thouſand; and there is no other diſeaſe conſpicuous in the deſtruction of mankind, where we can produce mathematical demonſtration of being able to reſcue ſo many lives from the grave.

Contagious diſeaſes amongſt the horned cattle, have attracted the attention of the legiſlature; but hitherto the parliament, the metropolis, and the nation, have beheld with inſenſibility and indifference, the carnage of a contagious diſeaſe amongſt the human ſpecies.

In the preceding chapter (*of Obſervations*, &c. &c.) it has been demonſtrated, that Inoculation at the expiration of ſixty years, ſince its firſt introduction, has made very little progreſs in London; that to effect any material diminution of mortality by the Small-pox in cities, inoculation muſt be practiſed at an early age, and at the private houſes of the inhabitants of every rank; and that the alarms and apprehenſions of doing more public injury than benefit, by diſperſing the infection from Inoculation, are ill founded. As one proof out of many others, that the arguments advanced in ſupport of the above important propoſition are unanſwerable, they have ſeemingly, at leaſt, produced a ſudden converſion and total revolution in the ideas of one of the greateſt Engliſh champions againſt general Inoculation in London, and other cities; I mean Baron Dimſdale. Since the publication of my *Obſervations*, &c. &c. the Baron has been very lately at the expence of a new edition, of what was formerly called his *Thoughts on General and Partial Inoculations*; for the glaring purpoſe of eraſing every page and ſyllable in that work, which militated againſt general Inoculation in London; and in ſupport of which pernicious doctrine, he has perſiſted ſo many years in writing books and pamphlets: the Dedication to the Empreſs of Ruſſia, and a detail of the Baron's tour to that country, make one half of this laſt haſty production to which I allude; immediately after, and in the center, are buried what was before called his Thoughts on General and Partial Inoculation: the title page however is changed; the Baron himſelf has changed ſides, and makes ſeveral lame excuſes for his former errors; concluding at laſt with his hopes, that Inoculation may become general at private houſes in cities. As the Baron has thought it prudent to ſuppreſs the name of the author, from whom he manifeſtly received his information and correction, ſuch conduct lays me under the neceſſity of ſtating the true fact with this public notoriety.

Nothing now remains, but to chalk out, and to erect ſome ſimple and general inſtitution, to diſtribute the benefit of Inoculation, *gratis*, amongſt the young offspring of all the laborious and indigent claſs in the metropolis, and by that means

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means alone, to preſerve near two thouſand lives annually. An Inoculating Diſpenſary, muſt be a ſeparate and diſtinct inſtitution, and cannot, for obvious reaſons, be incorporated with any other public Diſpenſary. That ſuch a plan is eaſy and practicable, and can be effectually ſupported by a trifling expence, I ſhall now clearly demonſtrate: this is only a rough outline, and is ſubmitted with great deference to the amendments, and alterations, of men of judgment.

For the convenience of Inoculation, and of viſiting the ſick, this great metropolis may, I preſume, be divided into the *five* following *Circles*. In forming the partitions, I have taken to my aſſiſtance, the map and geographical chart of London, and the Bills of Mortality: I have attended in ſome degree, to the poverty and opulence of different quarters, their extent, compactneſs, and ſituation: fractional exactneſs cannot be expected; nor as I have ſhewn at full length in my Obſervations, ſhould the burials be taken as an exact index of population.

WESTMINSTER DISTRICT.

Two Phyſicians, one Apothecary, containing two Circles.

UPPER WESTMINSTER CIRCLE, including the pariſhes of Pancras, Marybone, Paddington, St. George's Hanover-ſquare, St. Ann's, Weſtminſter, and St. James's, Weſtminſter.

A line drawn from Charing-Croſs, through the Haymarket, and ending at the foot of Tottenham-Court Road, divides this circle from the reſt of the metropolis.

LOWER WESTMINSTER CIRCLE, including the pariſhes of St. Margaret's, Weſtminſter; Petty France and Pimlico; St. John the Evangeliſt, St. Martin in the Fields, St. Paul, Covent-Garden; St. Mary-le-Strand, St. Giles's in the Fields, St. George, Queen-Square, and St. George, Bloomſbury.

A line drawn from Temple-Bar to the end of Gray's-Inn-Lane, divides this circle from the city. The central part of this Diſtrict is ſomewhere near Soho-Square.

CITY of LONDON DISTRICT.

Two Phyſicians, one Apothecary, containing two Circles.

CITY of LONDON CIRCLE, including ninety-ſeven ſmall pariſhes within the walls; alſo St. Sepulchre, St. Bartholomew the Great and Leſs; St. Botolph Aldgate, Alderſgate, and Biſhopſgate; St. Bride's, St. Giles by Cripplegate, St. Dunſtan's in the Weſt, St. Andrew, Holborn; St. James, Clerkenwell; St. John, Clerkenwell, and St. Mary, Iſlington.

This circle extends on the river ſide, from Temple-Bar to the Tower.

WHITECHAPEL and WAPPING CIRCLE, including the pariſhes of St. Mary, Whitechapel; St. Luke, Middleſex; St. Catherine near the Tower; Trinity in the Minories; St. John, Wapping; Chriſt Church, Spitalfields; St. Leonard, Shoreditch; St. Matthew, Bethnal Green; St. Dunſtan's, Stepney; St. Paul, Shadwell; and St. George, Ratcliffe Highway.

N. B. Hackney being too remote, is not included.

The central part of this Diſtrict is ſomewhere near Moorfields.

BOROUGH of SOUTHWARK and SURRY DISTRICT,

Extending from Vauxhall, Lambeth, and Newington, including five pariſhes of Southwark, and Rotherhithe.

One Phyſician and one Apothecary.

The central part ſomewhere near London-Bridge.

Three ſmall houſes of eaſy rent to be hired, one in *Weſtminſter*, one in the *City*, and one in the *Borough*; which I call the three *Inoculating Diſtricts*. In each of theſe houſes, medicines are to be kept, prepared, and diſtributed. From the extremity of any one Diſtrict to the Inoculating

lating Houſe, or Diſpenſary, which ſhould be in the centre, will not be one hour's walk; and to preſerve the life of their child, is no extraordinary effort of parental labour: in like manner, the Phyſicians reſiding in each *Circle*, will not have half an hour's journey to the extreme of their viſiting boundary. Each Circle has one Phyſician; each Diſtrict one Apothecary; *in all, five Phyſicians, three Apothecaries:* at firſt, they are all to officiate *gratis:* Inoculation to be performed by the Apothecary, at the Diſpenſary, in preſence and under the direction of the Phyſician: after Inoculation, none are to be brought back again to the Diſpenſary; but when neceſſary, attended at their own houſes: their parents or friends alone are to attend to conſult the Phyſician, either at his own houſe, or at the Diſpenſary, where each Phyſician will attend three days in the week, two hours each day. Should any three families, in a contiguous neighbourhood, agree to have their children inoculated *at one time*, the Phyſician and Apothecary, on regular notice, and a Governor's recommendation, will wait upon them at their own houſes, and there ingraft the infection. The Governor's printed letter will ſpecify each Phyſician's Circle, his days of attendance, and place of abode. The Apothecary to reſide conſtantly at the Diſpenſary to perform Inoculation, and to make up preſcriptions. The trouble of Inoculation will be very light, and requires no anatomical ſkill. Suppoſing that *eighteen* each day were to be inoculated in London, that is, ſix to each Apothecary, and which can be done in a few minutes; eighteen times three hundred and ſixty-five, makes in the year ſix thouſand eight hundred and ſeventy; a number in all probability greater than will apply to a charitable Diſpenſary. Viſiting the ſick, is the moſt laborious office, and falls to the Phyſician.

The fundamental intentions of inſtituting an Inoculating Diſpenſary in London, are to inoculate at an early age, that is, under five years old, to inculcate the tranſcendent importance of this maxim upon the heads of families, to exhort and ſpur them to the practice, and to rouſe them from their fatal lethargy. Upon an average, more than fifteen thouſand annually undergo the Small-pox in the metropolis: ſuppoſe that one-third of theſe, or five thouſand, are of the laborious and indigent claſs, who would apply to a Diſpenſary; yet even then, one half, or perhaps two-thirds of this five thouſand, will eſcape after Inoculation, without the neceſſity of Medical Preſcriptions; at leaſt, the conſumption of drugs will be trifling: the medicines being confined to one ſingle diſeaſe, which attacks the ſame

perſon

perſon but once in life, will alſo be very few in number, and not coſtly, nor indeed would young children ſwallow many medicines. Therefore, as in the infancy of the inſtitution, it is propoſed, that the Phyſicians and Apothecaries officiate gratuitouſly, an extremely ſmall ſum will be ſufficient to defray the expence of drugs, and of three ſmall houſes, and to diſtribute the illuſtrious benefits of Inoculation, and of *ſkilful* medical advice on emergencies, amongſt all the laborious and indigent orders through every quarter of this metropolis. I pledge myſelf to find able Phyſicians and Apothecaries, who will undertake this duty. Many humane Gentlemen will offer themſelves to act alternately as clerks, to enter regularly in a book to be kept at each Diſpenſary, the names, ages, and place of abode of thoſe inoculated, with their recovery and death: from this book the monthly and annual returns are to be copied and publiſhed.

After the perſeverance of a few years in ſupporting this Inſtitution, there cannot be a doubt, that prejudices and intereſted oppoſition would be overcome; that Inoculation, which is yet in its infancy in London, would become a general practice in the early part of life; and that in a very ſhort time, either by the bounty of the legiſlature, or private contributions, ſalaries could well be ſpared to the Inoculators of the laborious and indigent orders. I would fix the ſalaries as low as poſſible; one hundred pounds annual ſalary to each Phyſician, fifty pounds to each Apothecary, and houſe-room in the Diſpenſary for the latter. The whole united ſalaries of Phyſicians and Apothecaries, the expenditure for houſe-rent, drugs, and every expence whatſoever, would not exceed *nine hundred pounds*. It is therefore an indiſputable fact, that more lives might be annually preſerved by this Inſtitution alone, than there would be pounds ſpent in ſupport of it. A much greater ſum is every year raiſed by voluntary contributions, for a ſingle, and I ſhould add, a moſt valuable and well-conducted charity in the City, the Alderſgate Diſpenſary, and five times that ſum for ſeveral hoſpitals.

This Inſtitution is to be ſolely appropriated to Inoculation, and none labouring under the natural Small-pox, to be recommended as patients. The latter are at preſent admitted as out-patients of the different Diſpenſaries and Hoſpitals, and are either preſcribed for, or viſited: ſo little ſucceſs, however, has the beſt advice and preſcriptions in the natural Small-pox, that it is right and prudent to warn the Inhabi-

tants,

tants, not to truſt to that precarious and ruinous mode of protection.

Subſcribers of one guinea to be annual Governors, of ten guineas Governors for life; each to recommend, in the courſe of oue year, four patients, or three families *at one time*, to be inoculated: experience will beſt determine the numbers proper for each to recommend. All the rules reſpecting Treaſurer, Governors, Select Committees, and Elections, and all other Regulations proper for conducting this Inſtitution, may readily be copied from the other Diſpenſaries already erected.

It will be proper, that a ſmall conciſe pamphlet be publiſhed by the Medical Gentlemen, who aſſociate for the above humane purpoſe, to be printed at the expence of the public funds, to ſhew the inhabitants the neceſſity and importance of general and early Inoculation, and the inefficacy of Inoculating Hoſpitals: one of theſe pamphlets to be given to each Subſcriber, others to be diſtributed to the poor, others to be ſold at the low price of ſix-pence, or at the utmoſt, one ſhilling each; and it would be adviſeable to ſend a copy to coffee-houſes, and to each of the different clergymen in London, who, in a variety of ways, have it in their power to inſtruct and to enlighten the public in this eſſential ſubject, and to increaſe the Diſpenſary funds. Such a cheap publication will be neceſſary on other accounts, to ſilence envious or intereſted opponents to the practice of general Inoculation, and to remove the prejudices of the ignorant and uninformed. At the end of the pamphlet, the Scheme and Rules of the Diſpenſary, the names of the Phyſicians, Apothecaries, Governors, and Subſcribers, to be annexed. It is, perhaps, ſuperfluous to obſerve, that every other great City in Europe, in proportion to the ſize of each, may adopt a ſimilar plan for General Inoculation.

FINIS.

BRITISH MUSEUM